Managing ***Diabetes*** *At School 2006*

Recommendations for the management of Diabetes
For children and adolescents in school

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The manual is designed to be copied and distributed to school staff, parents and other caretakers as deemed appropriate and is available online at http://healthvermont.gov

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PURPOSE

This manual has been prepared as a resource for school staff and families caring for children and adolescents who have diabetes.

The Vermont Department of Health, Diabetes Prevention and Control Program (DPCP) was established to reduce the burden of diabetes for people with diabetes and their families. One compelling need identified through the DPCP is the management and safety of children and adolescents with diabetes in school.

Specific goals of the manual include:

- Ensuring that the health and safety of the student is maintained in the school setting through development and implementation of an Individual Care Plan (ICP) and training of school staff.
- Supporting the student in becoming independent with self-care management that is consistent with age and interest.
- Guiding school staff in their understanding of diabetes and its management, and assuring the coordination of diabetes care in school with the care provided in the home.
- Supporting student participation in school functions by removing barriers.

CHAPTER 1. About Diabetes and Control

Diabetes is a chronic metabolic disorder, resulting in the body's inability to utilize glucose (sugar) for energy. The body either cannot produce the hormone, insulin, or it cannot effectively use the insulin it produces. Diabetes is not contagious. The cause is unknown, but appears to be a combination of genetic and environmental factors.

There are two major types of diabetes, type 1 and type 2.

Type 1 diabetes accounts for less than 10% of all diagnoses but is the most common type in school-aged children.

- previously called juvenile, or insulin-dependent diabetes, onset usually occurs in individuals under the age of 20
- it is an autoimmune disease in which the insulin-producing cells of the pancreas are destroyed
- treatment includes daily injections or continuous infusion of insulin with an insulin pump to maintain normal blood glucose levels along with attention to diet and exercise

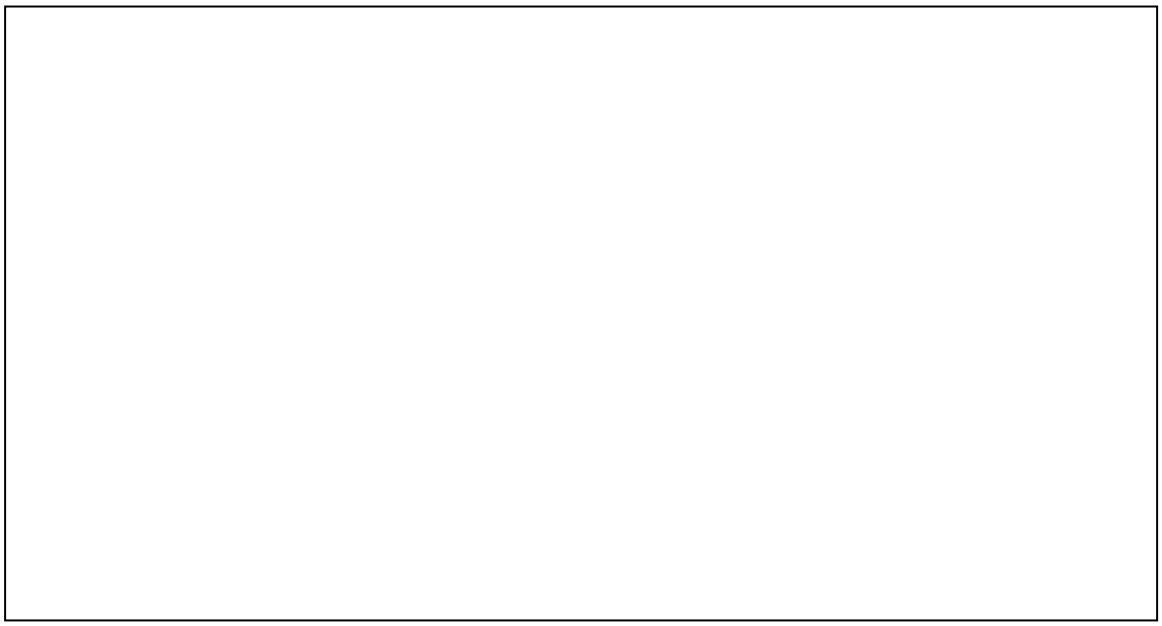
Type 2 diabetes is more common overall, accounting for more than 90% of diagnoses.

- previously called adult-onset, or non-insulin dependent diabetes its onset usually occurs in individuals over 40 years of age
- in recent years the incidence has increased in school-age children and adolescents, linked to increased levels of obesity
- is characterized by a resistance to insulin rather than a deficiency of the hormone
- treatment includes diet, exercise, and, for some individuals, medications that may include insulin

The information in this manual applies to both type 1 diabetes and type 2 diabetes.

Control of Diabetes

There is no cure for diabetes so the treatment plan is directed at managing or controlling its course. This is achieved by balancing insulin or oral medications, food and exercise. Blood glucose monitoring enables people with diabetes to balance these three components of management and adjust one or more of them to correct or maintain target blood glucose levels.



Low blood glucose, *hypoglycemia*, may be caused by inadequate carbohydrate, alcohol consumption, too much insulin or more exercise than usual. Elevated blood glucose, *hyperglycemia*, may be caused by excessive carbohydrates, too little insulin, illness, stress or less exercise than usual.

The student's school performance will be optimized if the blood glucose remains in the target range as determined by the health care team. Left untreated, both high and low blood glucose levels can affect the student's ability to concentrate on schoolwork and participate in school activities.

TYPE I DIABETES

In type 1 diabetes the body's immune system attacks its own insulin-producing cells in the pancreas and destroys them. With the destruction of insulin-producing cells, the body cannot make insulin and the person must take daily insulin to live. In some cases, there is a 'honey moon' phase during which time the body can make some insulin so only small amounts of external insulin are needed. This period can last from weeks to months.

Symptoms

Symptoms usually develop rapidly, over a few days. The classic symptoms include increased thirst, increased hunger, increased urination, weight loss, fatigue and blurred vision. Left untreated, the condition can progress to a serious complication know as diabetic ketoacidosis.

Risk Factors

Researchers are still trying to identify the exact cause of type 1 diabetes. A combination of genetic and environmental factors is involved.

TYPE 2 DIABETES

An Emerging Health Problem for School Age Children and Adolescents

Type 2 diabetes begins as a slow progressive process in which the body becomes resistant to its own insulin. Genetic factors, excess body weight, and physical inactivity can all play a role in the development of type 2 diabetes. In order to maintain blood glucose in the normal range, the body increases the production of insulin. During this period of high insulin levels, children may have few symptoms. Eventually, the pancreas is unable to meet the demands created by the insulin resistance.

Type 2 diabetes was once rare in childhood, but is now becoming increasingly common in American children and teenagers. Type 2 diabetes is more common in certain ethnic groups (African American, Hispanic, Native American, and Pacific Islanders). Unlike type 1 diabetes, it is more common in impoverished children. In some diabetes centers that serve high risk populations, type 2 diabetes comprises half of the new diagnoses. The epidemic of type 2 diabetes in childhood is related to the high prevalence of overweight American children and adolescents.

Symptoms

Symptoms of type 2 diabetes progress over a number of months or years. High blood pressure, abnormal lipid values, excessive body weight, and *acanthosis nigricans* (dark, velvety textured skin found at the base of the neck, arm pits and groin area) can be precursors in the development of type 2 diabetes. Children and adolescents may also develop the classic signs of type 1 diabetes including excessive thirst and urination. Left untreated, this condition can progress to severe illness with dehydration, extremely high blood glucose and acidosis. *At the time of diagnosis, it can be quite hard to distinguish type 1 from type 2 diabetes.*

Risk Factors

- Children over age 10 who have a body mass index (BMI) greater than the 85th percentile for age and sex (see BMI charts at end of appendices)
- Sedentary lifestyle
- Family history of type 2 diabetes (parent, aunt, uncle, or sibling)
- Ethnicity – higher risk in Hispanic, Native American, African American, Asian American and Pacific Islanders
- Presence of any signs of insulin resistance, including:
    - acanthosis nigricans (dark, velvety textured skin found at the base of the neck, arm pits and groin area)
    - polycystic ovarian syndrome
    - high blood pressure and abnormal blood lipids (low HDL cholesterol and high triglycerides)

Children and teenagers with a body mass index (BMI) greater than the 85th percentile, and two or more risk factors should be referred to their health care provider for further evaluation and a fasting blood glucose test. (American Diabetes Association. Consensus Statement: Type 2 Diabetes in Children and Adolescents. Diabetes Care, vol.23. no.3, March 2000, pages 381-389.)

Children and adolescents who are overweight or at risk of overweight may be at risk for developing *prediabetes or impaired glucose tolerance* which is a precursor to the development of type 2 diabetes. These individuals should be monitored and screened routinely.

In May of 2005 The Vermont Department of Health updated their *Provider's Toolkit* to include health screening recommendations for type 2 diabetes and pre-diabetes in children and adolescents.

CHAPTER 2: DAILY MANAGEMENT OF DIABETES

Control of diabetes requires on-going balance between nutrition, physical activity and medications in order to maintain desired blood glucose levels. This section of the manual addresses each of these components as they affect daily management.

BLOOD GLUCOSE MONITORING

Blood glucose monitoring is done so that the student, family and health care providers can make appropriate decisions about the balance of medications, food and exercise. This section describes how to perform monitoring as well as how to interpret and act upon the results.

Monitoring Procedures: Times, record keeping, where to be performed and specific procedures are established at the planning meeting and are included in the Individual Care Plan (ICP).

Hypoglycemia: Low blood glucose is the most common event that needs attention in school. Hypoglycemia is discussed in detail in the section that follows.

Hyperglycemia: High blood glucose may also be seen in school. Hyperglycemia is generally not an emergency situation. Sick day guidelines are included.

Ketoacidosis: When the body has an inadequate amount of insulin and turns to alternative source of energy the result is the production of ketones, an acid. This is a result of acute illness or imbalance in diabetes management. It is not commonly seen in school.

Parents should inform the school about what blood glucose levels require specific intervention for their student in order to avoid either high or low blood glucose levels. This information should be in the Individual Care Plan (ICP).

Monitoring Versus Testing

"Monitoring" is a more appropriate term than "testing" to describe blood glucose measurement. This helps the student feel better about results and know that whether or not glucose measurements are within target range the results are not an indication of the student's ability to take care of his/her diabetes. Blood glucose results should be described as "above, below or target range". Avoid terms like "good or bad". Attitudes are generally improved when feelings of good or bad, right or wrong, are not attached.

Check with parents for guidance as to which term you should use. Try to keep them consistent with those used by the student's family and primary health care team.

When

Glucose monitoring in school should closely follow the monitoring schedule done at home. In general, when children and adolescents have type 1 diabetes monitoring is done four or more times per day, usually before meals and before bedtime. In addition, some students may need monitoring before or after exercise. Students with type 2 diabetes will have specific monitoring guidelines from their healthcare providers. Most students will need more frequent monitoring if they exhibit symptoms of high or low blood glucose or are ill. The Individual Care Plan (ICP) specifies when regular monitoring should occur and what symptoms require additional blood glucose checking.

Where

Monitoring should be done wherever a student with diabetes feels most comfortable, and where it will cause the least disruption to the student's academic program. This may be in the classroom or in the nurse's office.

If the student is exhibiting signs of hypoglycemia, blood glucose levels should be checked as soon as possible. If the student needs to go to the health office, he or she will need to have an escort. This is necessary because the student may become confused and may not be able to make it to the test site alone.

It is *unsafe and not appropriate* to ask another student to be responsible for accompanying a student who may be exhibiting signs of hypoglycemia or

hyperglycemia. Junior or senior high school students who are willing and able to accept the responsibility may be considered if the students and family members agree.

Who

The school nurse, teacher, or other staff members who have been trained should assist with or supervise the monitoring. Older students usually prefer to carry their own monitoring/insulin kits and may be independent in blood glucose monitoring and insulin administration.

Tools and Steps

Monitoring blood glucose requires pricking the skin with a lancet to obtain a drop of blood. This is placed on a specially prepared strip. The results are read by a handheld machine (meter). The information is then recorded. The specific steps are shown in Figure 1 on page 15.

Consult the student's Individual Care Plan (ICP) for specific responses and information pertaining to blood glucose levels, equipment and supply storage and disposal.

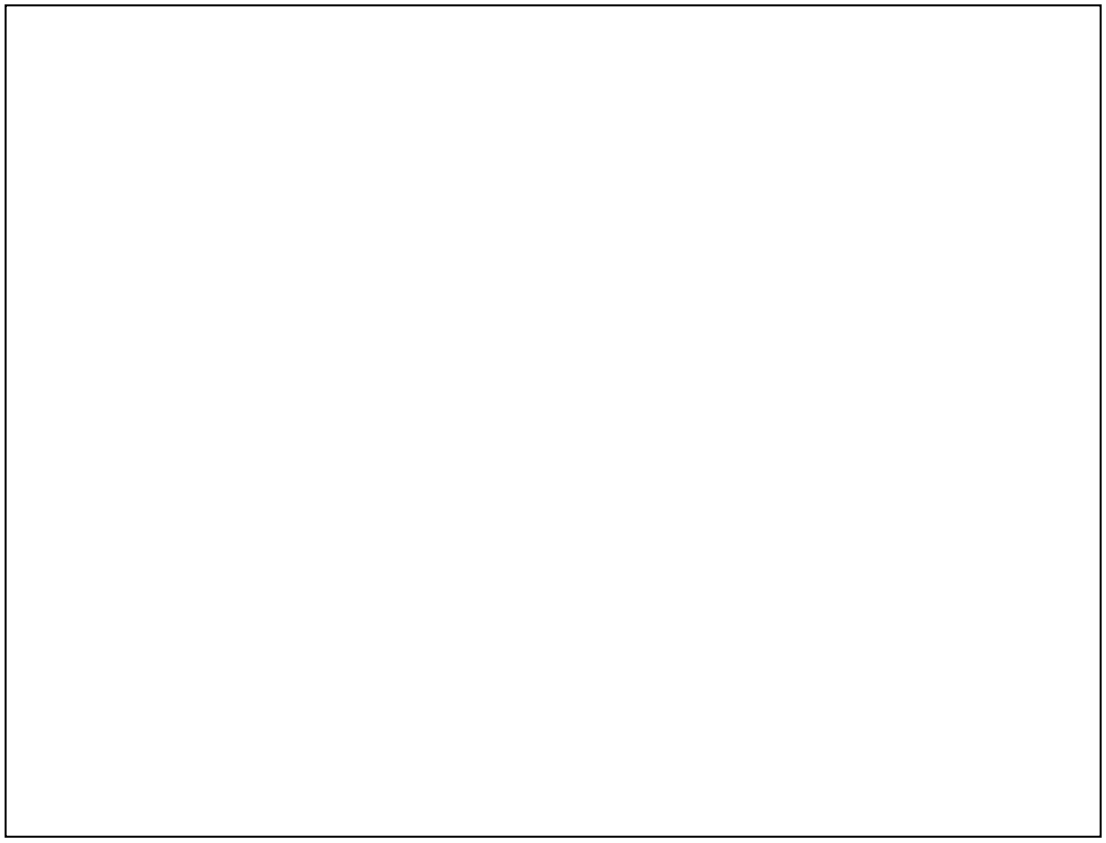
Special note on alternate site monitoring:

Meters and lancets devices now allow for alternate site blood sampling. These sites include the forearm, palm, abdomen and thigh. Research has shown that results may differ from fingertip samples when blood glucose levels are changing rapidly. Fingertips remain the preferred site for blood sampling.

Recommendations for alternate site use:

- Do not use an alternate if the student has hypoglycemic unawareness (cannot recognize symptoms of low blood glucoses).
- Do not use an alternate site when treating high or low blood glucoses.
- If symptoms do not match the alternate site blood glucose result, confirm with a finger tip sample.
- Always rub area prior to using the lancet device to increase circulation.
- Be sure the meter is approved for alternate site monitoring.

Figure 1



Record Keeping

Record keeping is fundamental to the optimal management of diabetes. The diabetes record may travel with the student from home to school thereby enabling the communication of patterns of blood glucose values, food intake, variations to normal exercise and the possibility of developing an illness.

Frequent episodes of high or low blood glucose levels in school should alert the school nurse, classroom teacher and others of a need for more communication with the family and/or health care team in order to assess and plan appropriate interventions.

Classification of Numbers

70-100 mg/dl	Normal fasting plasma glucose
80-180 mg/dl	Target range – should be individualized for age
$\leq$ 70 mg/dl	Hypoglycemia
$\geq$ 240 mg/dl	Hyperglycemia

The Individual Care Plan (ICP) is the source of appropriate responses to blood glucose values outside of the student's target range.

Emergency Care
Low blood glucose is the condition most likely to escalate into an emergency in the school setting. ***It is critical to act quickly at the first signs of hypoglycemia so that an emergency situation does not occur.***

An emergency response is required under the following conditions:

1. Loss of consciousness, seizure or inability to take food by mouth. *See section on hypoglycemia for appropriate action..*
2. Blood glucose level does not increase with food ingestion. *Follow health care providers' instructions or section on hypoglycemia.*
3. Hyperglycemia with vomiting and with medium or large ketone levels. *See section on ketoacidosis.*

HYPOGLYCEMIA (low blood glucose without loss of consciousness)

Approximate Level
< 70 mg/dl

Causes
When the body gets too much insulin, too little carbohydrate, or increased physical activity or exercise. Greatest risk is for those on insulin.

Onset
Rapid. Most likely to occur at peak insulin action times. Can occur up to 24 hours after prolonged physical activity.

Symptoms
Low blood glucose feels differently to different people. It may include any of the symptoms below easily remembered by the "5 W's": wet, wacky, wobbly, white and weak, but it is important to be aware of a student's specific symptoms.

- faintness
- shakiness
- muscle cramping
- hunger
- nervousness
- stomachache
- blurred vision
- headache
- fatigue
- sweating
- dizziness
- weakness
- pale skin
- inappropriate actions
- confusion
- irritability
- crankiness
- convulsions
- unconsciousness

Treatment
Check blood glucose if possible. If the student is incoherent, is having difficulty following instructions or is combative and a blood glucose sample is difficult, treat as if it is a low blood glucose. It is better to treat a suspected low in order to prevent a severe low blood glucose. For students using a pump, see **Chapter 2 Insulin Pumps** for directions on suspending the pump.

1. Stop activity in order to prevent further reduction in the blood glucose level.
2. Have student eat 15 grams of simple carbohydrate such as a small juice box or 4-glucose tablets. If student is having difficulty eating or drinking, Glucose Gel (tubes) may be used. AVOID carbohydrate foods that also contain protein or fat (e.g. chocolate, cookies or chips). These foods are digested more slowly than pure carbohydrate foods.
3. Wait 15 minutes.
4. Check blood glucose level again. If blood glucose level is not in target range repeat Step #2.
5. If the blood glucose level is above 70, have the student eat a meal or snack. If the student is not scheduled for meal or snack, add a small snack of 15 grams of carbohydrate such as crackers and cheese. *Over-treatment can cause a rebound effect resulting in high blood glucose levels.*
6. If often takes 30 to 60 minutes for the symptoms of hypoglycemia to subside once target blood glucose values are achieved.

HYPOGLYCEMIA (low blood glucose with loss of consciousness or seizure)

Emergency Response is Indicated

Early recognition and treatment of *hypoglycemia* is extremely important. Left untreated, hypoglycemia can result in loss of consciousness and/or seizure activity. If that occurs, the student will need treatment with the administration of glucagon, a prescription hormone that causes a rise in blood sugar.

In agreement with the American Diabetes Association position statement "Diabetes Care in the School and Day Care Setting" (See Appendices), *it is recommended that all schools be responsible for providing a trained individual who can test blood glucose, and administer insulin and glucagon under the appropriate circumstances during all school functions and sponsored activities including those that take place off school premises.* These individuals do not need to be health care professionals. Parents should provide the Glucagon Emergency Kit and the physician's order to administer it (ONLY THE KIT FORM SHOULD BE USED AT SCHOOL). The school should have a list of designated-trained individuals who can administer glucagon. This list should be kept in an accessible, agreed upon location.

*INSTRUCTIONS FOR USING GLUCAGON**

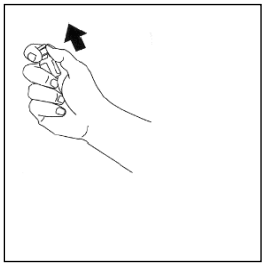
(copy for trained staff)

Use ***only*** when the student is unconscious or unable to be treated by mouth.

*** * * * CALL 911 IMMEDIATELY * * * ***

TO PREPARE GLUCAGON FOR INJECTION

1. Remove the flip-off seal from the bottle of glucagon.



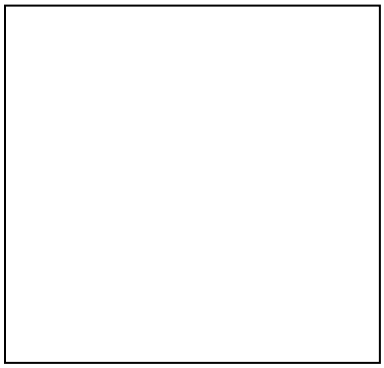
2. Remove the needle protector from the syringe, and inject the entire contents of the syringe into the bottle of glucagon. DO NOT REMOVE THE PLASTIC CLIP FROM THE SYRINGE. Remove syringe from the bottle.

3. Swirl bottle gently until glucagon dissolves completely. GLUCAGON SHOULD NOT BE USED UNLESS THE SOLUTION IS CLEAR AND OF A WATER-LIKE CONSISTENCY.

TO INJECT GLUCAGON

Use Same Technique as for Injecting Insulin

4. Using the same syringe, hold bottle upside down and, making sure the needle tip remains in solution, gently withdraw all of the solution (1 mg mark on syringe) from bottle. The plastic clip on the syringe will prevent the rubber stopper from being pulled out of the syringe; however, if the plastic plunger rod separates from the rubber stopper, simply reinsert the rod by turning it clockwise.



   The usual adult dose is 1 mg (1 unit). For children weighing less than 44 lb (20 kg), give 1/2 adult dose (0.5 mg). For children, withdraw 1/2 of the solution from the bottle (0.5 mg mark on syringe).

Using the following directions, inject glucagon immediately after mixing.

5. If possible, cleanse injection site on buttock, arm, or thigh with alcohol swab.

6. Insert the needle into the loose tissue under the cleansed injection site, and inject the prescribed dose of the glucagon solution.(For children weighing less than 44 lb, the dose is half the amount or 0.5 mg). ***There is no danger of overdose.*** Apply light pressure at the injection site, and withdraw the needle.

7. Turn the patient on his/her side. When an unconscious person awakens, he/she may vomit. Turning the patient on his/her side will prevent him/her from choking. Wait 10 minutes. The student should “come –around” but may continue to be confused. Check the blood glucose.

8. ***Feed the patient as soon as he/she awakens and is able to swallow.*** Give the patient a fast-acting source of sugar (such as a regular soft drink or fruit juice) and a longer acting source of carbohydrate such as crackers. If the patient does not awaken within 15 minutes, give another dose of glucagon and ***inform a doctor or emergency services immediately.***
9. A doctor should be notified whenever severe hypoglycemic reactions occur.
10. **Discard unused portion of glucagon.**

*Adapted From Eli Lilly Glucagon Patient Information Insert©

Additional comments for the school setting

1. Since glucagon kits at school should be sealed – not used, there is no need to wipe the top of the bottle after the top is flipped off.
2. Parents should be notified as soon as possible.
3. A physician order for glucagon use and permission form from parents should be obtained and included as part of the Individual Care Plan (ICP).
4. The ICP should indicate the individuals who are trained to administer the glucagon.

HYPERGLYCEMIA (high blood glucose)

Approximate Level

>240 mg/dl

Cause

Too little insulin, too much carbohydrate or too little physical activity. Infections, illness, and/or stress may precipitate the condition.

Onset

Can occur in only a few hours for those on insulin, especially for those using an insulin pump. It can occur over days for those on certain medications.

Symptoms

- thirst
- frequent urination
- dry mouth
- fatigue
- headaches
- abdominal pain
- ketones in the urine

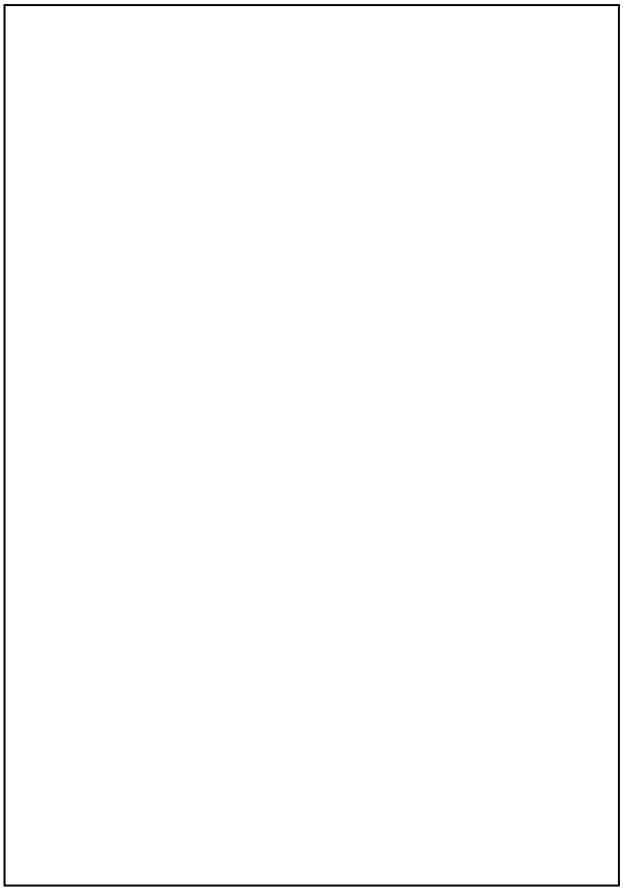
About Ketones

When there is not enough insulin or insulin is not working effectively to use glucose for energy, the body uses fat for energy. The end product of burning fat is ketones. When ketone levels rise, they spill into the urine. If ketone levels are higher than the kidneys can process, ketoacidosis may occur.

Treatment

(For students using a pump – see Chapter 2, page 41, Insulin Pumps)

1. Check blood glucose levels.
2. Check for ketones if blood glucose levels are over 240 mg/dl and/or symptoms of stress or illness are present.



3. If ketones are not present, have student drink water.
4. If moderate or large ketones are present, call parents. Administer extra insulin as per Individual Care Plan (ICP).
5. Anytime ketones are moderate to large, have student drink 8 - 16 oz of sugar-free fluids per hour.
6. If ketones are negative or small, the student may return to the classroom and their regular routine. They must be allowed to have a water bottle in class and to leave to use the restroom when needed.

NOTE: Exercise should be avoided if ketones are present. Increased physical activity can lead to the production of more ketones. This is a result of fat used for energy as the glucose is "stuck" in the blood due to the lack of insulin. The end result is further ketone development.

KETOACIDOSIS

Hyperglycemic episodes may progress into a serious condition called *diabetic ketoacidosis or DKA*. When ketone levels rise to more than the kidneys can handle, ketoacidsosis develops. Students with frequent high and low blood glucose are at greater risk of developing ketoacidosis than those whose blood glucoses are in the target range most of the time.

The risk of DKA occurring at school is extremely low, when insulin is being administered correctly.

Onset

Can be rapid for type 1 diabetes, and if not treated can lead to severe illness or even death. In type 2 diabetes, persistent hyperglycemia over several days can lead to non-ketotic acidosis (hyperosmolar nonketotic syndrome).

Symptoms

- dehydration, dry mouth and/or lips
- drowsiness
- abdominal pain
- flu like symptoms
- vomiting
- labored breathing
- fruity smelling breath

Treatment

1. Check blood glucose levels and ketones.
2. If over 240, and ketones are moderate to large, and the student has *any* symptoms of ketoacidosis, ***call parents immediately*****.**
3. Administer extra insulin as per Individual Care Plan (ICP).
4. Have student drink 8 – 16 oz of sugar-free fluids per hour.
5. If the student is vomiting and is unable to take fluids, call the Rescue Squad (911).
6. Avoid all forms of exercise.
7. The student should be dismissed from school.

SICK DAY MANAGEMENT

'Sick' refers to a cold, flu, fever, infection, injury and/or physical or emotional stress. When a student is sick, their blood glucose will often be elevated even if they are eating less food. Sometimes high blood glucose levels are the first sign of illness. There are important guidelines that should be followed during illness to *prevent* the development of diabetic ketoacidosis. Usually the student will be treated at home during an illness but in the event the he or she is getting sick at school and contact with the parents has not been established, the school staff should be prepared to care for the student.

1. The student will continue to need insulin or medications. Do not omit insulin doses because the student is not eating. If there is a question about the dose, call the parents or healthcare provider (as per ICP). Substitute carbohydrate-containing fluids to match meal or snack carbohydrate needs.
2. Monitor blood glucose and urine ketones. Monitor blood glucose every 2 hours and check all urine for ketones.
3. Have the student rest in the nurse's office.
4. Students need 4 – 8 oz. of fluid an hour to maintain hydration. If they are unable to eat their usual meals, alternate sugar-free fluids with fluids containing carbohydrate.
5. Seek input from the student's health care provider if any of the following are present:
   - The student is vomiting or has diarrhea three or more times.
   - The student has moderate to large ketones.
   - Extra insulin has been given yet the blood glucose has not gone down.

Table 1: Sick Day Foods that contain 15 grams of Carbohydrates

½ cup of apple juice	1/3 cup sweetened yogurt
¾ double stick Popsicle ®	5 Lifesavers®
1 slice dry toast	½ cup cooked cereal
6 saltines	½ cup regular soda
1/3 cup frozen yogurt	1 cup Gatorade®
½ cup regular ice cream	¼ cup sherbet
¼ cup regular pudding	½ cup regular gelatin
1 cup *lite* yogurt	Milkshake 1/3 cup low fat milk and ¼ cup ice cream

Chart 1: Treating Low Blood Glucose

(Copy for classroom and field trips)

Name: _____ Picture:

Grade: _____

Teacher: _____

Causes:

- Too much insulin
- Too few carbohydrates
- Too much exercise

Symptoms:

• Hunger • Irritable • Shaky • Sweaty • Pale • Other:	• Weak • Dizzy • Tired • Lack of concentration	• Sleepy • Poor coordination • Confused • Slurred speech • Other:	• Unable to swallow • Unconscious • Seizure • Other:

Action:

1. Check blood glucose if possible
2. Stop activity (If using an insulin pump, disconnect or suspend pump)
3. Always **treat suspected low blood glucose** when in doubt
4. Notify school nurse

□ If on insulin pump – suspend or disconnect. □ Give 15 grams of simple carbohydrate. □ Wait 15 minutes. □ Re check blood glucose □ If less than 70, repeat 15 grams of simple carbohydrate. □ If next lunch or snack is not in one hour, give15 gm snack of carbohydrate and protein/fat. □ Communicate with parents.	□ If on insulin pump – suspend or disconnect. □ Give 15 – 30 grams of simple carbohydrate. □ Wait 15 minutes. □ Re check blood glucose □ If less than 70, repeat 15 grams of simple carbohydrate. □ If next lunch or snack is not in one hour, give 15 gm snack of carbohydrate and protein/fat. □ Communicate with parents.	□ If on insulin pump – suspend or disconnect. **CALL 911** □ Give Glucagon. (stored: _____) Trained:_____) □ Position student on side as vomiting is common. □ Notify parents.

School Nurse # _____

Parent/Guardian Contact Information:

Home: _____

Work: _____

Cell: _____

Chart 2: Treating High Blood Glucose

(Copy for classroom and field trips)

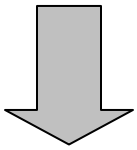
Name: _____ **Picture:**

Grade: _____

Teacher: _____

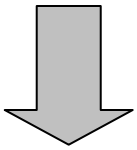
Causes:

- Not enough insulin
- Too much carbohydrate
- Illness, infection, stress
- Too little activity



Symptoms:

• Thirsty • Frequent urination • Tired • Hunger • Lack of concentration • Blurred vision	• Sweet smelling breath • Rapid breathing • Nausea • Vomiting • Abdominal pain • Weakness • Confusion - Unconscious



Action:

1. Check blood glucose
2. Notify school nurse
3. If on pump, check site for redness, leaking, or detachment – if present, change infusion set.

Mild (BG ____ to ____)	Moderate (BG ____ to ____)	Severe (BG over ____)
▪ Give insulin as ordered: ▪ Give 8 – 16 oz sugar- free fluids ▪ May resume classroom activities. ▪ Re-check BG in 2 hours. ▪ Document action. ▪ Other:	▪ Check urine for ketones (if moderate to large call parents) ▪ Give insulin as ordered: ▪ Give 8 – 16 oz. sugar- free fluids. ▪ Re-check BG in 2 hours. ▪ If on pump and still high, give injection and change infusion set. ▪ Notify parents. ▪ Stop physical activity. ▪ Other:	▪ Check urine for ketones (if moderate to large call parents) ▪ Give insulin as ordered: ▪ Contact parents. ▪ Call 911 if unconscious. ▪ Give 8 – 16 oz. sugar-free fluids. ▪ Stop physical activity. ▪ Other:

School Nurse #_____

Parent/Guardian Contact Information:

Home: _____

Work: _____

Cell: _____

NUTRITION – Food For Routine and Special Occasions

Food

Planning for meals, snacks, special events and emergency situations for a student with diabetes is an integral part of the diabetes management plan. Each student should have an established meal plan which the student and family have developed with a registered dietitian. This meal plan includes time, type and amount of food needed to balance the student's nutritional needs with his/her activity level and insulin regime. The student with type 2 diabetes will most likely have a meal plan that promotes weight loss.

There may be times when the balance or timing of insulin and food with activity and other aspects of the student's life will not be as precise as desired and the student will experience episodes of hypoglycemia. Emergency food supplies, usually called snack packs or low packs, will be needed. These should be supplied by the family.

Meal Planning

Meals for students with diabetes are based on the same principles of nutrition as for any child or adolescent. The primary difference is that the carbohydrate intake for the student with diabetes is usually "controlled" or "planned." Carbohydrates are the body's main source of energy and have the greatest effect on blood glucose levels. They are found in fruit, vegetables, grains, milk and many other foods including those containing sugar and flour. Proteins such as meat, chicken, seafood, eggs and cheese and fats contain no carbohydrate.

The key to good blood glucose control is balancing and spacing carbohydrate foods throughout the day at meals and snacks. The **total amount** of carbohydrate eaten at one time is the primary concern, not the **source** of carbohydrate. Research has shown that sugars and sweets included in meals do not raise the blood glucose any more quickly than the same amount of carbohydrate from starches or "complex carbohydrates." The healthy nutrition advice suitable for everyone should be followed: "Eat sugar and sweets in moderation."

The method of measuring carbohydrate is usually a combination of two systems:

1) “Carbohydrate Counting” and 2) “Exchanges” or “Carbohydrate Choices.”

“Carbohydrate Counting” includes counting the specific number of grams of carbohydrate that are “assigned” to each meal and snack. Food labels and a variety of lists are available to provide the information about how many grams of carbohydrate are in a food. Consult food labels when possible, as this information is more accurate for specific foods. The **TYPE** of carbohydrate food eaten is not emphasized. For additional carbohydrate counting information, see page 93 of Appendices.

With the “Exchanges,” a meal plan is established recommending a number of “exchanges” or “servings” from each food group at each meal or snack. Often, the food groups, which are primarily carbohydrate (starch, fruit, milk, and other), are grouped together and referred to as “carbohydrate choices.” Each choice is equal to 15 grams of carbohydrate for the serving size listed. Vegetables also contain carbohydrate, but many contain lesser amounts than a similar size serving of starch, fruit and other carbohydrate-rich foods.

Although students with diabetes have the same nutritional needs as others, there are special considerations for the school setting. Students with diabetes may need to eat regular snacks and to eat their meals and snacks at consistent times.

Snacks

It is often necessary for a student with diabetes to have a snack mid way between breakfast and lunch, depending on his/her insulin regime, age and activity level. A mid-afternoon snack may be eaten at school or at home depending on the student’s individual needs. The Individual Care Plan (ICP) should define the timing of snacks and alternatives in case of unforeseen circumstances. Students with type 2 diabetes should have a daily meal plan that might include snacks.

School Meals

The student with diabetes may not need modifications in the school meal but may need assistance with counting carbohydrates. The food service department should assist the care plan team by obtaining nutrition information regarding the carbohydrate content of the foods served.

If substitutions are necessary, the food service director should be a member of the care plan team and guide the necessary adaptations to the regular menu items. For additional information on school meal modification consult, *"Special Meals for Special Needs: A Manual for School Food Service Managers,"* available from the Department of Education, Child Nutrition Programs.

Federal regulations require that schools participating in the "National School Meals Program" modify meals for students whose disability restricts their diets. A physician must certify the necessary modifications. A copy of the "Medical Statement for Students Requiring Modifications in School Meals" form is included in Chapter 6, page 82.

Pump Therapy and Multiple Injection Therapy

Many students use an insulin pump or multiple daily injections for the delivery of their insulin therapy. The amount of insulin bolused is determined by the total of carbohydrates that will be eaten. Additional insulin to correct high glucose levels may also be bolused. The student may need assistance in calculating the carbohydrates for a meal and/or the amount of extra insulin needed.

Students using pump therapy or multiple injection therapy have flexibility in their schedule. They are not on a fixed schedule of meals or snacks.

Emergency Food Supplies ('Low Kits')

Good overall planning and access to carbohydrates ensures that the student with diabetes on insulin has the means of obtaining appropriate emergency responses during the school day.

The family should furnish emergency food supplies or "low kits" to provide the student's preferred choice of food to respond to a low blood glucose. These kits should be in several locations and travel with the student. Appropriate locations for low kits include the classroom, the health office, physical education office, school office and school bus.

Table 2: Recommended Foods for Low Kits

Immediate Treatment

3-4 Glucose tablets	15
1 Tube Glucose gel or small cake frosting (“CakeMate”)	15
½ cup of Juice (orange, apple, pineapple)	15
½ cup of REGULAR soda	15
½ cup of REGULAR Kool-Aid	15

Follow-up Snack

(15-30 minutes following hypoglycemia)

1 cup milk	12
Cracker snack pack (cheese or peanut butter)	(as listed on food label)
Granola Bar	(as listed on food label)

Special Occasions
There are NO forbidden foods or activities in the lives of people with diabetes. Advance planning will allow the student to participate fully in the non-routine activities of the school.

Food carries many emotional overtones. It is wise to avoid giving food any special power. This can be accomplished by avoiding terms such as “diet” and “cheat” in dealing with food issues. ***Remember*** that there are no forbidden foods in a meal plan for a student with diabetes.

School Parties
High sugar treats are often high in fat and low in nutritional value. These foods should be discouraged from inclusion at school parties. Providing more nutritious foods, such as low-fat fruit desserts is healthier for all students. Serving more nutritious foods gives the message that healthy foods are fun and taste good. This can also serve as a reminder that parties provide an opportunity to share and celebrate important events in our lives; the focus need not be food.

When parties include high sugar/high fat foods a notice should be sent to the parents. With appropriate planning, students with diabetes may have small amounts of high- sugar, high-fat party foods, such as cake or ice cream.

Field Trips
Field trips and bus trips require advance planning. Parents should provide written instructions concerning the special needs of the student while traveling. Supplies that should travel with the student include the items needed to monitor blood glucose level, snack packs, glucose tablets/gel, insulin and glucagon. The chaperone on the bus and/or the driver must be informed and provided with instructions regarding the student’s care. The student should be allowed to eat on the bus if necessary.

Staying after School
Staying after school should be planned in advance. Monitoring, mid-afternoon snacks or insulin injections may be part of the routine for students with diabetes and must be accommodated in any after-school activity. Glucagon and a designated person trained in its administration *must* be available. The after-school routine should be outlined in the Individual Care Plan (ICP). If the school nurse is not available during after-school events, another staff member must be identified as the primary contact for questions or concerns.

EXERCISE AND SPORTS

Exercise is important to all people but especially for people with diabetes. It is important to begin good health habits early in life and to make exercise a part of the student's everyday activities. A minimum of 30 minutes of moderate activity most days of a week should be the goal. The best exercise for a student is the one that he or she enjoys most. With a few special considerations, the student with diabetes can fully participate in all opportunities available in schools. Students with diabetes can and should be encouraged to participate in any extracurricular activity.

Routine Exercise

Exercise improves diabetes management in many ways including burning excess glucose, keeping the body in good shape, keeping the heart rate and blood pressure lower, keeping blood fat levels normal and making people more sensitive to insulin. Students will also feel better and it may help them to maintain normal blood circulation in their feet. Since physical exercise will help the body to burn more glucose, it may result in a decreased requirement for insulin, and/or an increased need for extra food depending on the length and intensity of the activity. (See Table 3)

Table 3: Physical Activity / Blood Glucose / Carbohydrate Needs

(For students taking insulin)

These are guidelines and should be individualized to each student.

Short duration ½ hour mild-moderate intensity	Less than 100	15 grams	May not be needed
	Greater than 100	May not be needed	May not be needed
Moderate intensity for 1 hour or more	Less than 100	25 – 50 grams	15 to 30 grams each hour
	100 – 180	15 grams	
	180 - 240	May not be needed	
	> 240 and ketones	Should not exercise	
Strenuous intensity for 1 hour or more	Less than 100	50 grams	25 – 50 grams each hour
	100 – 180	25 – 50 grams	
	180 - 240	15 grams	
	> 240 and ketones	Should not exercise	

Students who use insulin pumps may decrease their basal rates or suspend the pump during exercise.

Often students are told not to exercise if blood glucose levels are high but this is ***only true*** if urine ketones are present. There may be an increase in hypoglycemic episodes if no dietary accommodations are made for the increase in activity. To be sure that the student exercises safely the following should be observed:

- Eat before extended periods of exercise
- Have extra snacks available during exercise
- Always carry a sugar source
- Reduce insulin dose if necessary
- Change injection site if necessary, abdomen may be the best site for most exercises

- Check blood glucose levels before and after any new exercise to establish blood glucose patterns
- Wear an ID bracelet or necklace
- Try to exercise with someone who knows about low blood glucose reactions
- Make sure that teachers and coaches know about low blood glucose reactions
- Do not exercise if ketones are present
- Drink plenty of water, especially in hot weather
- Watch for delayed hypoglycemia which can happen up to 24 hours after prolonged physical activity
- Have Glucagon Kit available

Team Sports

Team sports should be encouraged if the student expresses an interest. The student, parents and the Individual Care Plan (ICP) will provide the guidance necessary to accommodate full participation. Be sure that all coaches are aware that the student has diabetes and that a responsible person is present to provide any necessary help if the student has a low blood glucose reaction (including administration of glucagon). If a low blood glucose reaction occurs during a game, the student will need to rest at least 10 minutes after treatment before rejoining the game. The accommodations to ensure safe diabetes management during sports include monitoring supplies, glucagon and snacks at the site of the activity and staff trained regarding their use. Most students old enough to participate in school sports are able to monitor their own blood glucose and can adjust their snacks accordingly. Many students will choose to sip Gatorade or other sports beverages during practice and games to keep their blood glucose levels from getting too low.

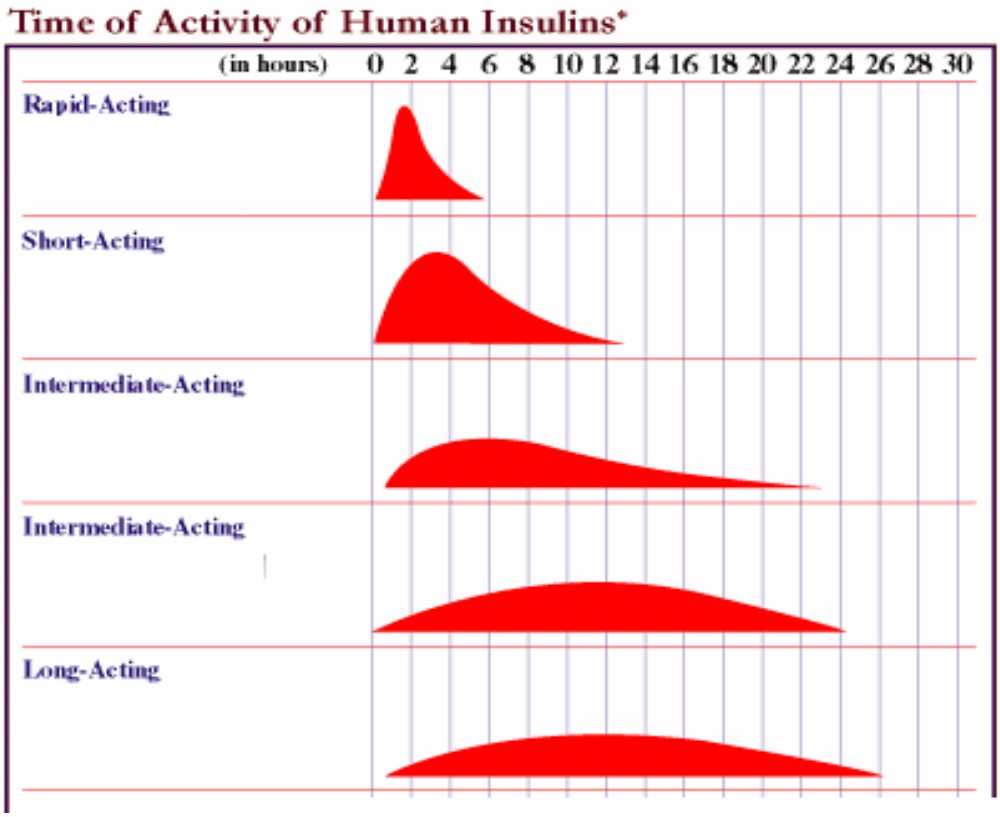
INSULIN

Students with type 1 diabetes **must** inject insulin daily or use a continuous infusion pump. Students with type 2 diabetes may require insulin. The health care providers determine the insulin types, dosages and times needed. Insulin needs vary with each student. Students who inject insulin at school may need assistance and supervision.

Types and Characteristics
Insulins vary in their onset of action, peak action, and in their duration of action. Most students will be on a schedule that includes a combination of rapid/short and intermediate/long acting insulin, taken before or directly after meals. Blood glucose is lowest when insulin has its peak effect. Thus, meals and snacks may be planned for this time.

The following table summarizes the available insulins according to the onset, peak, and duration of action. The times of onset, peak and duration of effect vary among individuals. All bottles of insulin sold in the United States have 100 units per milliliter of fluid, thus are labeled U-100. The appropriate syringes are also labeled U-100.

Table 4: Types of Insulin



Humalog/ Novolog

Regular

NPH

Lente

Ultralente

Lantus **Long-Acting (has no peak and lasts for 24 hours)**

Administration
The school nurse or designated person is responsible for injecting insulin or in assisting a student who can self-inject insulin. Humalog, Novolog, and Regular insulins are the only insulins used for spot dosing, and are most likely to be administered during school hours.

Inspect the insulin
Check the expiration date printed on the label. Insulin will only last for 30 days once the vial is opened. Humalog, Novolog, Regular and Lantus insulins are clear, others are cloudy. There should be no clumping of particulate in the insulin. Do not use insulin that is not uniform in consistency. Cloudy insulin vials should be gently rolled between hands to mix.

Select injection site
Injections may be given in the abdomen, thighs, buttocks or arms in the fatty tissue (not muscle). Insulin sites should be rotated in order to avoid tissue damage, which results in poor absorption of the insulin. Speed of absorption decreases with each of the following sites: abdomen, arms, legs and buttocks.

INSULIN CARE AND STORAGE

Effectiveness of insulin is dependent on its careful handling and storage. Date the insulin when it is opened and discard 30 days after opening. Check the expiration date of unopened insulin bottles regularly.

- Keep insulin refrigerated for longer shelf life, if a refrigerator is not available, a cool pack may be used. Un-refrigerated insulin should be kept as cool as possible.
- Do not let insulin freeze, if it does, discard it immediately.
- Keep insulin away from heat and light.
- Clumping or frosting results from too much shaking or rough handling and the insulin should be discarded.

INSULIN PENS

Insulin pens – pre-filled disposable pens or reusable pens are easy to load, allow for accurate dosing, flexibility, and easy to read numbers for dose selection. These devices hold 3.0 ml (300 units) and come in the various types of insulins including: rapid acting, short acting, intermediate and long acting insulins. Ultra-fine pen needles allow for pain free injections. The various pens can be dosed in ½ unit increments - to 1 unit increments. The use of insulin pens can help minimize dose errors.

Disposable Pens	*Reusable Pens*	*½ Unit Dosing Pen*
Innolet	Innovo	NovoPen Junior
BD Pen	Novo Pen 3	
Lilly Disposable Pen	Indue	
NovoNorduc Flex Pen	Autopen	
	Opticlick Pen	

Disposable pen needles are available in 29 and 31 gauge and 5, 8 and 12.7mm in length. (Each pen needle should be removed immediately after use; when left in place, they create an open passage to the insulin chamber. The open passage may allow bacteria into the chamber or fluid to leak out, which may alter the strength of the insulin.)

INSULIN PUMPS

Insulin pumps – also referred to as Continuous Subcutaneous Insulin Infusion (CSII). The pump is worn on the outside of the body, and is the size and weight of a beeper. It holds a reservoir of insulin inside the pump and is programmed to deliver the insulin through a thin plastic tube called an infusion set. The infusion set is inserted via a needle that is covered by a cannula just below the skin. Once inserted, the needle is removed and the cannula remains in place for 2-3 days. When it is time to change the infusion sets, a new infusion set is placed in a different site. Insulin pumps without tubing are currently being introduced to the market.

Insulin pump therapy provides a continuous infusion of insulin subcutaneously known as the basal rate (background insulin), and provides insulin to cover food and hyperglycemia when programmed, which is referred to as a bolus.

The pump uses rapid acting insulin as opposed to conventional injections, which combine long acting and short/rapid acting insulins. If the supply of insulin is interrupted due to mechanical pump failure, dislodgement of the cannula, accidental severing of the tubing, or clogged or obstructed tubing, the blood glucose can rise rapidly. Subsequent hyperglycemia and possible ketoacidosis can occur in as little as *three hours* due to the lack of insulin.

The parents, student, and health care providers in the school should discuss and outline the responsibilities of all involved in caring for a student with diabetes using a pump. These responsibilities should take into consideration the maturity, knowledge level, and competence of the student. Completing a pump skills checklist at the beginning of each school year will facilitate a smooth transition.

The specific pump manufacturer instructions must be followed. Manuals, booklets, and videos are usually available free of charge by calling the number listed on the back of the pump or by contacting the student's diabetes health care providers.

Treating hypoglycemia with pump therapy
Low blood glucose can occur while using the pump for the same reasons as an individual who is using injection therapy. Follow the same protocol for treating hypoglycemia. (Chart 1 Treating Low Blood Glucose) Disconnect pump while treating.

Treating Hyperglycemia with pump therapy
Hyperglycemia can occur rapidly for a student on an insulin pump. The health care team and the Individual Care Plan (ICP) will give specific guidance on determining the appropriate correction bolus to treat hyperglycemia*. If one blood glucose reading is above 250 mg/dl, the following steps should be taken:*

- Immediately take a correction bolus.
- Check blood glucose in one hour.
- If the second blood glucose is above 250, suspend or disconnect the pump.
- Take a correction insulin bolus by syringe.
- Check urine for ketones.
- Change entire infusion set system.
- Drink calorie-free liquids every 30 minutes.
- Check blood glucose every 2 hours and continue to take correction bolus insulin until blood glucose reaches target.
- Call health care provider if blood glucose and ketones remain elevated.

INFECTION CONTROL

Schools should have established procedures for responding to infection control and blood borne pathogens. The following is provided as general guidance.

In response to the increase in hepatitis B and C, and human immunodeficiency virus (HIV) infections, the Centers for Disease Control have recommended “standard blood and body-fluid precautions.” These measures are intended to prevent transmission of these and other infections, as well as to decrease the risk of exposure for care-providers and students. As it is currently not possible to identify all infected individuals, these precautions must be used with every student, regardless of their medical diagnosis.

Standard precautions pertain to blood and body fluids containing blood, cerebrospinal fluid, synovial fluid, vaginal secretions, semen, and pericardial fluid. These precautions do not apply to other body products such as saliva, sputum, feces, tears, nasal secretions, vomitus and urine unless blood is visible in the materials. However, these fluids and body wastes can be sources of other infections and should be handled as if infectious.

The single most important step in preventing exposure to and transmission of any infection is anticipating potential contact with infectious materials in routine as well as emergency situations. Based on the type of possible contact, the caregiver should be prepared to use the appropriate precautions and techniques prior to providing care. Diligent and proper hand washing, the use of barriers, appropriate disposal of waste products and needles, and proper decontamination of spills are essential techniques of infection control. Using common sense in the application of these measures will enhance protection of both the caregiver and the student.

Hand Washing

Proper hand washing is crucial to preventing the spread of infection. Textured jewelry on the hands or wrists (such as rings with stones) should be removed prior to washing and kept off until completion of the care procedure and hands are rewashed. Use of running water, lathering with soap and using friction to clean all surfaces of remaining jewelry and hands is key. Rinse well with running water and dry hands with paper towels. If soap and water are unavailable, an alcohol based hand sanitizing agent may be used.

- Hands should be washed before physical contact with student and after the contact is completed.
- Hands should be washed after contact with any used equipment.
- If hands (or other skin) become soiled with blood or body fluids, they should be washed immediately before touching anything else.
- Hands should be washed whether gloves are worn or not and after gloves are removed.

Barriers

Barriers include disposable gloves, protective eyewear, masks and gowns. The use of barriers is intended to reduce the risk of contact with blood and body fluids for the caregiver as well as to control the spread of infectious agents from student to student. It is essential that appropriate barriers be used when contact with potentially infectious materials is possible.

Gloves should be worn when direct care of the student may involve contact with blood or body fluids. For infection control, it is recommended that gloves be worn as well for contact with urine, feces and respiratory secretions. Gloves should be disposed of after each use and not reused.

DISPOSAL OF "SHARPS"

Needles, syringes, lancets and other sharp objects should be placed in a puncture-proof container immediately after use. To reduce the risk of an accidental needle stick or cut, needles should not be recapped, bent or removed from the syringe before disposal. Once it is full, the container should be sealed, labeled with a warning "do not recycle" and then disposed of in the garbage away from the reach of children. See Appendices, page 90 - "Safe Disposal of Syringes and Lancets".

ADDITIONAL CONCERNS IN THE MANAGEMENT OF TYPE 2 DIABETES

Diet, weight control and exercise are critical for controlling blood glucose in type 2 diabetes. Some students can avoid the need for medication by adhering to lifestyle changes and achieving weight loss. Medications may be added if needed.

Medications approved for youth with type 2 diabetes:

- **Metformin** (Glucophage) is the most commonly prescribed medication for type 2 diabetes. This can be taken once or twice daily. Generally it will not be necessary to administer it during school hours. Metformin can cause gastrointestinal upset which usually improves in one to two months. In general it is well tolerated, but in rare instances can cause a life-threatening buildup of lactic acid in the blood. Therefore, students taking Metformin should be carefully evaluated if they develop severe vomiting, unusual weakness, abdominal pain and rapid deep breathing (called Kussmaul respirations). Metformin does not usually cause hypoglycemia, but low blood glucose may result if it is used in combination with other diabetes medicines.

- **Insulin** may also be required to maintain healthy blood glucose levels. If oral medications are not sufficient to control the blood glucose levels, then insulin will be prescribed. Often, it can be given as a single injection with long-acting insulin at night. In some cases, students will need insulin coverage for every meal.

CHAPTER 3. Conditions and Diseases Associates with Diabetes

The following conditions and diseases may be associated with both type 1 and type 2 diabetes. The information provided is a brief overview in order to help school personnel recognize symptoms, be aware of treatment modes, and if necessary, include appropriate accommodations in the Individual Care Plan (ICP).

DEPRESSION

Depression appears to be more common in people with diabetes. It can also be more severe for people with diabetes. Signs and symptoms of depression and poor glucose control can be similar and lead to delayed diagnosis of depression. Depression can interfere with diabetes self-care and then become a barrier to achieving optimal blood glucose control. The signs and symptoms of depression include:

- Feeling sad or empty most of the time
- Trouble sleeping
- Weight loss or weight gain without trying to change weight
- Feeling sluggish or fatigued
- Loss of interest, no sense of pleasure most of the time
- Feeling worthless most of the time
- Lack of ability to concentrate most of the time
- Suicidal thoughts

Treatment may include psychotherapy and/or antidepressant medication.

EATING DISORDERS

Individuals with both types of diabetes are at greater risk than the general population for eating disorders. Females are at higher risk than males. The two most common manifestations are:

- anorexia nervosa – severe self-imposed restriction of caloric intake, often combined with high levels of exercise
- bulimia nervosa – binge eating followed by purging, may include the use of diuretic medications and laxatives

Eating disorders complicate diabetes management and can lead to serious health problems. Some signs and symptoms include:

- frequent diabetic ketoacidosis
- excessive exercise
- use of medication to control weight
- over concern about weight
- frequent severe hypoglycemia
- three consecutively missed menstrual periods
- inability to stop eating
- body weight less than 85% of the normal for height
- distorted body image

If an eating disorder is suspected, it is critical to communicate with parents and urge medical evaluation. Treatment may include psychotherapy and pharmacotherapy.

DISEASES ASSOCIATED WITH TYPE 1 DIABETES

Hypothyroidism

Over 10 % of children with type 1 diabetes mellitus will also develop autoimmune thyroiditis (Hashimoto's disease) which results in low levels of thyroid hormone in the blood. Hypothyroidism can produce lethargy, constipation, slow growth, slow heart rate, excessive weight gain, and irregular menstrual cycles. Hypothyroidism can be easily treated with oral medication (l-thyroxine) taken once daily.

Celiac Disease

Celiac disease, also known as *gluten-sensitive enteropathy* or *celiac sprue*, is a disease in which the body is allergic to gluten, the protein found in wheat products. If a person with celiac disease eats any foods containing gluten, the allergic reaction may affect the lining of the small intestine and cause symptoms of: stomach pain, gas, diarrhea, and abnormal height/weight gain. Some people with celiac disease do not have any symptoms. Screening for celiac disease involves a blood test. If this is positive, the individual should have a biopsy of the intestine for a definitive diagnosis.

Celiac disease occurs in 1 of 20 (5%) people with type 1 diabetes.

Treatment of celiac disease includes restriction of all foods containing gluten. This includes any foods made with wheat, rye and barley products. Any other grains including rice, corn, and oats can be consumed as long as they do not contain gluten-containing ingredients.

As the combination of diabetes and celiac disease leads many dietary considerations, it is very important that an individual receive nutrition education from a dietitian familiar with both diabetes and celiac disease. Contact the student's health care provider for other resources on celiac disease.

CONDITIONS ASSOCIATED WITH TYPE 2 DIABETES

Acanthosis nigricans

This is characterized by hyperpigmented, velvety, hyperkeratotic plaques that are most often localized to the neck, underarms, groin, and inner thighs. Acanthosis nigricans is found in 7% of children and is nearly always associated with obesity.

Polycystic ovarian syndrome (PCOS)

This disorder is most common in women under the age of 30. It causes undeveloped follicles that appear as small cysts in the ovaries. The symptoms include:

- irregular menstrual periods with long cycles
- very light or heavy bleeding during periods
- infertility
- hair on face, chest, and lower abdomen
- obesity
- acne

It is diagnosed by physical exam along with hormone blood level tests and sometimes an ultrasound. Treatment depends on the symptoms. Women with PCOS are at higher risk for diabetes, and should be tested for diabetes.

CHAPTER 4. Psychosocial Concerns

Psychosocial Issues:

Trust

Parents and guardians need to know that the school will be able to manage their child's diabetes-related needs. Trust will be enhanced by the school personnel working closely with the parents and guardians in planning for the student's care. This includes daily plans for monitoring and injections, as well as a plan for managing emergency situations. Ideally school personnel should meet at the beginning of the school year to develop this plan.

Developmental level

It is important to consider the student with diabetes within the context of their developmental level, both currently and at the age of diagnosis. Developmental level will determine, to a large degree, the student's acceptance and response to the disease and level of participation in self-care. Table 5 provides guidance on the level of responsibility children and adolescents may be able to accept at each age level. It should be noted that there is wide variation of "normal" among children and teenagers, so that some may accept responsibility for components of their care at younger or older ages than shown. Level of independence with care at school should be determined in conjunction with parents and guardians as well as the student's medical team.

Living with a chronic condition

A condition (such as diabetes), that interferes with daily functioning for more than three months in a year is defined as *chronic*. The student with diabetes is subject to many feelings about his/her condition. School personnel can be instrumental in assisting the student and his/her family to accept the condition and be prepared to cope with behaviors related to denial, fear, anger, guilt and depression.

Like all chronic conditions, diabetes has a profound effect on the entire family. Planning for the care and meeting the needs of a child or teenager with diabetes can be exhausting. Family coping mechanisms should be supported and enhanced so that acute and chronic complications for the student can be avoided. The school should have an appropriate list of resources to provide to families that include therapy services, support groups and written information.

Self-empowerment

Children and teenagers living with diabetes must learn to integrate many facets of self-management into their individual lifestyles. Students may be assisted with this by careful consideration of individual capabilities. Providing the opportunity to develop skills in self-care will promote self-empowerment and enhance the student's ability to self-manage. Ultimately, a student's confidence will go far toward achieving better control of diabetes. Appropriate management of diabetes should be praised just as good grades are acknowledged.

Table 5: Development and Participation in Self Care

4-5	Knows likes and dislikes. Inconsistent food choices. Beginning to recognize low blood glucose.	Can tell where injection should be. Can pinch skin.	Collects urine for ketones. Turns on meter. Helps with recording.	Identifies with "good" and “bad." These words should be avoided. A child this age may think that he or she is bad if the blood glucose value is said to be "bad." Concrete thinker
6-7	Can begin to tell carbohydrate content of foods. Knows which ones to limit.	Can begin to help with aspects of injection. Can give pump bolus with supervision.	Can help with blood glucose monitoring. Can prick finger.	Needs many reminders and supervision. Concrete thinker May need external reinforcement for participating in regimen. May struggle for sense of control.
8-10	Can select foods according to criteria. Knows if foods fit diet plan. Can recognize and treat low blood glucose.	May begin to do own injections or pump boluses.	Can check blood glucose with supervision. Can keep records. Can do own urine test with supervision.	Needs reminders and supervision. Understands only immediate consequences of diabetes control, not long term. "Scientific mind” developing--intrigued by tests.
11-13	Helps plan meals and snacks. Identifies appropriate pre-exercise snack. States role of diet in care.	Can measure and inject own insulin.	Can see blood glucose results forming a pattern. Still needs help interpreting urine test.	May be somewhat rebellious. Concerned with being different. (Wants to fit in.) May need reminders for self-care. More independent yet may require supervision to some degree.
14+	Adjusts food intake to maintain optimal blood glucose level. Can anticipate or prevent low blood glucose.	Can mix two insulins. Can adjust dose.	Can begin to use blood glucose results to adjust insulin.	Knows consequences of poor diabetes control yet still takes risks. Independence and self image are important. Rebellion continues. Abstract thinker

Note: The chart on the previous page provides guidelines only. Children and adolescents develop at different rates, and their ability to participate in self-care depends on their willingness to do so. It is important to understand that knowledge and behavior are NOT highly correlated.

TEENS – SPECIAL CONCERNS AND CHALLENGES

Many adolescent issues stem from the need to "fit in" or not appear to be different from peers. Insulin injections impose greater challenges for teens compared to teens who take oral medications. Fearing rejection, the adolescent may attempt to hide the fact that he/she has diabetes. In some instances, denial may lead to a deliberate rejection of components of self-management, which may result in poor diabetic control. Other issues that may interfere with the successful management of diabetes in adolescents include weight, self-consciousness and body image, particularly with females, mood swings, and depression. Diabetes control for adolescents is also impacted by peer pressure, the struggle to achieve independence, and erratic schedules.

The school team should be sensitive to the adolescent who is struggling with issues related to diabetes. In some situations, referral for counseling may be appropriate. Good communication with parents and other influential adults may assist passage through this tumultuous developmental stage. School personnel can offer important support, guidance, and make appropriate referrals for families to foster the positive growth and development of adolescents living with diabetes. In addition, steps to reduce demands placed on the busy adolescent should be taken. Providing school menus that include the carbohydrate content of foods and allowing the student to check blood glucose levels in the classroom will reduce the amount of time and effort required to adhere to the regimen and increase the likelihood of compliance.

Growth and Body Changes

Adolescence is a period of growth and the development of adult sexual characteristics. Many hormone levels dramatically impact and increase an adolescent's insulin requirements. If adequate blood glucose levels are achieved during this period, the adolescent can grow into his or her adult potential. It is important to recognize the role that hormones play in blood glucose control to avoid automatically assuming non-compliance with the diabetes regimen.

Driving

In the State of Vermont, a student can obtain a learner's permit at the age of 15 years. The application asks the applicant "*whether he or she has any physical or mental condition that could affect his or her ability to operate a motor vehicle safely*". The student with diabetes will be required to have his or her physician complete a form which indicates the student's level of diabetes control. This form accompanies the application for the learner's permit.

School personnel and parents should begin discussing the need for appropriate blood glucose control for at least six months before applying for the learner's permit so that the adolescent is aware of what he/she must do in advance.

As students drive, they should be aware of their blood glucose levels and the times when they may be at risk for hypoglycemia. If food has not recently been eaten, it is recommended that a blood glucose level be checked before driving. Emergency food kits should be easily accessible. Driving with low blood glucose results in greater impairment than driving when intoxicated from alcohol.

Alcohol, Tobacco and Drug Use

Many adolescents engage in risk-taking behaviors such as drinking, smoking (including chewing tobacco) and taking illegal drugs. Alcohol consumption in a person with diabetes can result in hypoglycemia by delaying the body's ability to detect and maintain an adequate glucose response. Tobacco impacts the blood vessels and is particularly harmful to people with diabetes as it can lead to possible kidney and heart damage. Chronic drug use may hinder motivation and the ability to manage diabetes. Counseling must be considered for students who are drinking alcohol or using tobacco and illegal drugs.

While it is important NOT to condone or encourage such high risk behaviors, it is equally important to recognize that many adolescents will engage in some degree of experimental behavior. Educating them and providing resources about safety, as well as offering a supportive and non-threatening individual with whom an adolescent can discuss such issues is critical.

CHAPTER 5. Diabetes in the School Setting

The school nurse is the most appropriate person in the school setting to provide care for a student with diabetes. Many schools in Vermont do not have a full-time nurse and sometimes a nurse must cover several schools. Even when a school nurse is assigned full-time to a school, the nurse is not always available to provide care during extracurricular activities and field trips. A plan must include care for all school related activities, as an emergency can happen at any time.

In Vermont, registered nurses may choose to delegate certain diabetes care functions to trained non-medical school staff. The National Association of School Nurses states that the licensed professional school health nurse must use nursing assessment and professional judgment in deciding which procedures in the school setting may be delegated. The non-medical school staff are trained and supervised by the school nurse. These functions may include:

- performing or assisting with blood glucose monitoring
- administering insulin or other medication
- treating low blood glucose
- treating high blood glucose
- checking urine ketones
- administering glucagon
- assisting with meals and snacks

Documentation and communication systems need to be set up between the school nurse, parent/guardian, and non-medical school staff. It should be clear who is responsible for contacting the family or health care provider for further instructions. Substitute school nurses must be aware of the Individual Care Plan (ICP) and delegated functions.

CARE PLANNING

Care planning in the school has four components:

Parent Conference
Planning Meeting
Individual Care Plan
Training of School Staff

PARENT CONFERENCE

This meeting usually includes parents, the principal, the school nurse, the student and others who may be invited by one of these parties. The purpose is to get to know one another, share information about the student and school, prepare for the initial planning meeting, and determine who will need to attend the planning meeting.

The *parent checklist* should be prepared at the parent conference so that the necessary forms and supplies can be brought to the planning meeting. These are included in Chapter 6. The need to develop a 504 plan should be discussed at this meeting.

PLANNING MEETING

When: Annually before the school year starts
At diagnosis
To revise or review a student's plan when necessary

Why: To meet with school staff to collect information
To develop, review and/or revise an Individual Care Plan (ICP)

Who: Participants may include:

- Family and student
- Principal
- School nurse
- Counselor or social worker
- Current year classroom teacher(s)
- Past year classroom teacher(s)
- Food service manager
- Physical education teacher/coach
- Bus driver
- Other school staff with direct responsibility for student
- Members of the health care team, if invited by parents

What: Suggested agenda items:

- Overview of type 1 or type 2 diabetes and its management
- Roles and responsibilities of staff members
- Identification school staff who will serve as resources for others

- Determination of the hierarchy of personnel expected to respond to emergency situations
- Determination of the location of food kits, glucagon and other supplies in the school building
- Determination of where the Individual Care Plan (ICP) will be kept and how individual components will be shared with appropriate staff
- Training for staff with specific responsibilities
- Emergency management

INDIVIDUAL CARE PLAN (ICP)

Planning is essential to the successful management of care for students with diabetes. In schools, the ICP is a good tool for accomplishing successful management.

The school nurse, in collaboration with parents, the health care team and others, develops this care plan describing the diabetes regimen prescribed for the student. It also identifies trained non-medical school staff that can perform or assist in blood glucose monitoring, ketone testing, and administration of glucagon. It should be available to all staff working with the student. The school nurse may extract sections of this manual and copy the pages, clip them to the care plan and distribute them to each team member. Developmental levels and cognitive and physical abilities of the student should be incorporated in the care plan.

Routine daily care includes:

- Blood glucose monitoring
- Obtaining phone numbers of parents, guardians, care providers and emergency contacts
- Responding to out-of-target blood glucose values
- Maintaining daily schedule of food, insulin and activity
- Assisting with special events/circumstances
- Providing a location of supplies and food
- Disposal of syringes, lancets, etc.

Emergencies:

Students with diabetes can have problems despite the best efforts at control. The school nurse needs to determine what constitutes an emergency situation. Parents and the health care team should provide guidance for the care plan.

Sample ICP and 504 plans:
Sample plans are available on the following Web site:
www.childrenwithdiabetes.com/504/

See Chapter 7. Regulations Affecting School Populations for a sample plan completed by a school nurse. These have integrated aspects of the ICP, School 504 Plan and a Student Accommodation Plan.

Form 1: Individual Care Plan—Diabetes Care in School

Child's Name_____

Grade: _____

Teacher:_____

Parent/Guardian:_____

Home_____ Work_____
Cell:_____ email:_____

504 plan □ yes □ no IEP □ yes □ no

Contact phone numbers (in priority order):

Call	Name	Phone	
1st			
2nd			
3rd			
4th			

Health Care Providers	Phone/fax

School Schedule

Time	Meal or snack Grams of carbs	Blood glucose monitoring	Phys Ed/ Recess	Insulin – routine needs

Monitoring: Target blood glucose levels are _____to _____

Will be done in:	Will be performed:
□ classroom	□ by student
□ nurses office	□ with supervision by :
□ other:	□ by the following trained school staff:

Treatments:

Lows if below _____	Highs if above _____
□ Call parent	□ Call parent
Treat with:	□ Give insulin (see below)
Usual signs:	□ Check ketones if above _____ Trained staff:

Food:
Requires menu modification by Food Service: YES NO
If yes, form has been completed and is on file in Food Service Office:
YES NO
Parties, Special Occasions or considerations:

Physical activity/exercise/ sports—(Note restrictions, snacks)

Insulin-to be given at school

Time	Type	Dose	By whom

Glucagon:
Individual(s) trained to administer glucagon

Does the child weigh less than 45 pounds? If yes, note on Glucagon kit.

Supplies	**Where stored**	**Staff name**	**Phone #**
Blood glucose monitor			
Snack or low packs, glucose tablets or gel			
Glucagon			
Insulin			
Other			

Emergency Plan: Call 911
Situation(s) constituting an emergency:

Signatures indicating approval:

School Nurse/Date_____

Parent/Date_____

Health Care Provider/date_____

TRAINING FOR SCHOOL STAFF

Goals for training

Each person listed in the ICP will be able to describe his/her role outlined in the ICP. They will be able to describe how their role relates to the roles of others and when and where to seek help.

Preparation

A health professional will assess the school personnel's knowledge and comfort level in caring for the student.

Attendance

Staff members listed in the ICP will be invited to the training session. In addition, administrative, counseling staff and any others who may interact with the student during the school session may also be invited.

Suggested components of training:

- Introduction to the student's Individual Care Plan (ICP)
- Overview of diabetes
- Monitoring tools: blood glucose meter, written records, etc.
- Signs, symptoms, and treatment of hypoglycemia and hyperglycemia
- Managing nutrition and exercise in the school setting
- Procedures for routine care of the individual student
- Storage of supplies
- Emergency procedures
- Overview of universal health and safety guidelines (OSHA) and disposal of supplies
- Monitoring techniques (for those who may do finger sticks)
- Glucagon administration (for those named in the emergency plan)
- Insulin or medication administration

Form 2: Staff Training Record

ROLES AND RESPONSIBILITIES

The wellbeing of a student with diabetes requires a collaborative relationship between the school and home. The student, his/her family and the health care team are responsible for overall care-planning and management. The school is responsible for ensuring that the Individual Care Plan (ICP) is implemented and supported in the school setting, and that all factors related to the student's diabetes care at school are communicated to the parent/guardian.

The staff section of the manual is designed to be individualized for each student and copied for each team member.

PARENT / CAREGIVER / GUARDIAN

- Advocate on behalf of the student
- Complete all required forms
- Participate in the parent conference and planning meetings with school personnel
- Approve the Individual Care Plan (ICP) and emergency procedures
- Provide and maintain all supplies necessary to meet the student's need in case of an emergency
- Keep the school informed of any changes in the student's health care
- Assist with the staff training if desired

STUDENT

Consistent with their ability, willingness and parental guidance, students may:

- Participate in the planning meeting and plan development
- Perform diabetes self-care activities such as monitoring blood glucose levels, administering appropriate insulin, eating the right amount of food at the right time, and carrying needed supplies
- Inform adults of symptoms of potential emergencies
- Carry supplies for possible hypoglycemic reactions
- Perform self-care that is developmentally appropriate
- Wear medical alert identification

HEALTH CARE TEAM

Members of the student's health care team may include: endocrinologist, pediatrician or family practitioner, nurse practitioner, certified diabetes educator (CDE), registered dietitian (RD), psychologist, social worker, exercise physiologist. These individuals:

- Collaborate with family and school nurse in development of the Individual Care Plan
- Provide education about diabetes and daily management to family members and school staff
- Help the family and student to make the needed life-style changes and develop the overall plan of care
- Meet with the student and family as often as needed
- Receive permission from the parent/guardian to communicate with the school nurse as needed

PRINCIPAL

General Role:

- Participates in the development and implementation of school policy related to diabetes management in the school setting
- Learns about diabetes for awareness of student's needs
- Promotes a supportive learning environment
- Supports development of the Individual Care Plan (ICP)
- Knows what to do in an emergency and the order of responsibility for emergency care for any school related function (on or off campus)
- Understands the federal and state laws that may apply to students with diabetes
- Respects the student's confidentiality

Specific Responsibilities:

- Supports the school nurse and care team in the implementation of the ICP throughout the school
- Explains laws and regulations to community members if necessary
- Facilitates problem solving and negotiations among members of the school team
- Designates and coordinates the 504 team
- Ensures appropriate communications with substitute teachers so they know that the student has diabetes

SCHOOL NURSE

General Role:

- Knowledgeable about diabetes and the needs of the student
- Promotes a supportive learning environment
- Manages the development and implementation of the Individual Care Plan (ICP)
- Describes one's own role and the role of others
- Develops an emergency plan and the order of responsibility for emergency care

Specific Responsibilities:

- Performs a nursing assessment of the student based on home or school visit
- Obtains pertinent medical and psychosocial information
- Assures the participation of the parents and student in development of the ICP, Emergency Plan, staff training and other aspects of diabetes care and management in the school
- Coordinates the student's in-school health care as specified in the Individual Care Plan
- Organizes and conducts pre-planning and planning meetings
- Ensures that caregivers in the school have received competency-based training in student specific techniques and problem management
- Communicates with school team members and parent/guardian on a regular basis

- Maintains appropriate documentation of care provided
- Regularly reviews and updates the ICP and training of caregivers
- Serves as student advocate
- Respects the student's confidentiality
- Serves as the 504 case manager if necessary

CLASSROOM AND SUBSTITUTE TEACHER

General Role:

- Learns about diabetes as it pertains to the student's need
- Promotes a supportive learning environment
- Participates in development of the Individual Care Plan (ICP)
- Understands one's own role and the role of others
- Knows what to do in an emergency and the order of responsibility for emergency care

Specific Responsibilities:

- Learns to recognize the signs and symptoms of hypo and hyperglycemia and is able to respond in accordance with the emergency plan
- Helps the student to comply with meal and snack requirements and glucose monitoring routines
- Communicates diabetes-related needs to substitute and special teachers and instructional assistants
- Educates the class about the special needs of the student (with parental permission and student input). The student with diabetes may be willing to present information to his or her classroom peers that can enhance peer knowledge and support for the student.
- Respects the student's confidentiality

FOOD SERVICE DIRECTOR AND STAFF

General Role:

- Understands the nutritional needs of a student with diabetes
- Promotes a supportive learning environment
- Participates in development of the Individual Care Plan (ICP) as appropriate
- Understands one's own role and the role of others
- Knows what to do in an emergency and the order of responsibility for emergency care

Specific Responsibilities:

- Guides the meal modification process
- Ensures that food is prepared and served according to the ICP
- Collaborates with the family and student on a menu plan when school meals are chosen
- Assists with providing nutritional information about the school's food and beverages
- Works with the school nurse to obtain a medical statement for meal modification
- Keeps medical statements on file and updates as necessary
- Communicates with the school's nutrition consultant when necessary to implement complex recommendations
- Trains the food service staff on meal modification and the needs of the student
- Never withholds meals because of nonpayment of fees
- Respects the student's confidentiality

Note: The responsibility of the Food Service is to accommodate the medical needs of the student, not personal food preferences. When menus are reviewed and appropriate substitutions are offered, the family may choose to pack a student's lunch at any time.

PHYSICAL EDUCATION TEACHER OR COACH

General Role:

- Learns about diabetes as it pertains to the student's needs
- Promotes a supportive learning environment
- Participates in development of the Individual Care Plan (ICP)
- Understands one's own role and the role of others
- Knows what to do in an emergency and the order of responsibility for emergency care

Specific Responsibilities:

- Monitors blood glucose level before and/or after activity if this is in the care plan
- Recognizes the student's usual level of activity
- Allows snacks before or after physical activity if indicated
- Encourages increased fluid consumption
- Learns to recognize the signs and symptoms of hypo and hyperglycemia and responds in accordance with the emergency plan
- Communicates diabetes-related needs to substitute and special teachers and instructional assistants
- Encourages participation in sports and athletic opportunities as appropriate
- Ensures that glucose monitoring equipment and 'low kits' are available at all activity sites
- Respect the student's confidentiality

COUNSELOR

General Role:

- Learns about diabetes as it pertains to the student's needs
- Promotes a supportive learning environment
- Participates in development of the Individual Care Plan (ICP)
- Understands one's own role and the role of others
- Knows what to do in an emergency and the order of responsibility for emergency care

Specific Responsibilities:

- Assists the student with concerns the student has regarding diabetes
- Communicates with the student, family, health care team and school staff as necessary
- Responds to ineffective coping mechanisms demonstrated by student and family
- Supports the student, family and school personnel in compliance with the ICP
- Respects the student's confidentiality

BUS DRIVER

General Role:

- May assist in development of the Individual Care Plan (ICP)
- Understands one's own role and the role of others
- Knows what to do in an emergency and the order of responsibility for emergency care

Specific Responsibilities:

- Learns to recognize the signs and symptoms of hypo and hyperglycemia and responds in accordance with the emergency plan
- Understands that the *end of the school day* is often the time of low blood glucose episodes
- Communicates diabetes-related needs to substitute drivers and transportation assistants
- Allows the student to consume a snack on the bus as indicated in the plan
- Keeps a 'low kit', provided by the family, readily available on the bus
- Respects the student's confidentiality

CHAPTER 6. Information for Parents – Roles, Responsibilities and Rights

(The word parent in this chapter will be used to indicate parent, guardian, or care provider.)

This chapter is designed for parents and can be copied for them to assist them in their roles, responsibilities and rights regarding their child or adolescent with diabetes at school. (It is not intended to provide education on diabetes self-care management).

Roles at diagnosis

Inform the school about your child's diabetes and set up a meeting with the school nurse to develop an Individual Care Plan (ICP).

Preparing for the school year

Preparation for the school year should start well before the first day of school. The following items should be completed in order to prepare the Individual Care Pan (ICP).

1. Parent Conference – A conference with the parents and school nurse to identify the student's needs, discuss components of the ICP, and develop the agenda for the planning meeting. During this meeting you should discuss the need for a 504 plan. The purpose of this meeting is to get to know one another, to share information about the student and the school, and to prepare for the Care Planning Meeting. The parents should bring supplies and items from the parent check list (Form 3, page 74) to this meeting. The forms should be completed in advance, with questionable details completed at the conference.

2. Complete all forms – (copies at end of chapter)
   - Form 4: Information Sheet- Diabetes Care in School (attach photo of child) This information will be used to develop an ICP
   - Pump Information Form (if needed)
   - Prescription Medication Order and Permission Forms for all medications to be given at school (forms should be signed by parent and/or health care provider)
   - Medical Statement for Students Requiring Modification in School Meals (if needed)

3. Planning Meeting – This school staff meeting should be held in the summer before school starts, or at diagnosis. The school nurse should organize and facilitate a planning meeting with the purpose to develop an ICP for the school setting. The meeting should include anyone that may have a role in the student's education and care. It may include:
   - Parent/guardian and student
   - Principal
   - School Nurse
   - Teacher
   - Bus Driver
   - Physical Education Teacher
   - Food Service personnel
   - Counselor
   - Members of the health care team

   The goal of the meeting is to provide basic knowledge of diabetes and its management, determine roles and responsibilities, decide where to store supplies/what to do in an emergency, and address other special accommodations.

4. Individual Care Plan – The school nurse will develop a plan based on the information from the two prior meetings. This plan may include a 504 plan. The plan should include:
   - Daily schedule – insulin, meals/snacks, and activity
   - Blood glucose monitoring – when, where, and by whom
   - How to respond to blood glucose results
   - Emergency contact information
   - Who can administer glucagon
   - Location of supplies and glucagon
   - Student's level of self-care
   - Field trip plan
   - Guidelines about when to call parents and health care team

5. Training – The school nurse will arrange training for school staff. The nurse will do the training with the assistance of the parents and/or the student's health care team. The purpose of the training is to educate and ensure the competence of the staff in the roles that were identified in the planning meeting.

6. Ongoing parent responsibilities:
   - Provide school with updated information
   - Provide school with enough supplies and snacks
   - Provide ongoing communication with the school staff
   - Meet with school nurse each year to revise the Individual Care Plan

7. Parents Rights

   Section 504 of the Rehabilitation Act of 1973

   According to Section 504 of the Rehabilitation Act of 1973 parents of qualifying children and adolescents have the right to develop a Section 504 Plan with their child's school. To qualify for protection under Section 504, a student must have a mental or physical impairment that interferes with a major life activity. Parents can access the law to ensure that, while at school, their child with diabetes can fully participate in all school activities, while maintaining their health care needs.

   Examples of accommodations include:
   - Adjusting monitoring procedures so that your child or adolescent can use the bathroom, have snacks, and monitor blood glucose levels
   - Individualizing assignments to make adjustments or repeat instructions when your child or adolescent has a high or low blood glucose during school
   - Ensuring that glucagon is available at any school function and that an individual is trained to administer it
   - Eating or drinking when necessary
   - Accessing the bathroom when necessary
   - Eating lunch and snacks at an appropriate times
   - Accommodating for absences related to medical visits
   - Assisting with self-care as appropriate

Individuals with Disabilities Education Act (IDEA)

The Individuals with Disabilities Education Act (IDEA) mandates that the federal government provide funding to education schools in order to provide free and appropriate education for students with disabilities. This may include students with diabetes. The school is required to develop an Individual Education Program (IEP) provided that his/her medical disability is significantly impacting the child's educational performance. In Vermont, a student is eligible for an IEP if:

1. The student has a disability.
2. The disability has an adverse affect on the student
3. There is a need for specialized instruction – not just accommodations.

American Disabilities Act

The American Disabilities Act law prohibits schools from discriminating against a student with a disability, this includes diabetes.

FORM 3: PARENT CHECK LIST

This checklist is provided to help parents identify the forms, supplies and other materials that they need to bring to the school. The list should be modified for individual students.

All items on the checklist should be sent to the school nurse.

- ☐ Data / Information form
- ☐ Photograph of child
- ☐ Monitoring supplies:
  Lancets, meter, strips, alcohol, ketone strips, etc.
- ☐ Snack / low kits. Number: _____
- ☐ Glucose tablets, Gel (tubes). Number _____
- ☐ Record keeping sheets
- ☐ Insulin and related supplies: Syringes, alcohol, etc.
- ☐ Pump Supplies (if applicable)
- ☐ Prescription Medication Order and Permission Form for Insulin
- ☐ Glucagon kits with pre-measured dosage. Number _____
- ☐ Prescription Medication Order and Permission Form for Glucagon

FORM 4: Information Sheet—Diabetes Care in School

To be completed by parent or legal guardian and used to develop an Individual Care Plan with the school staff

Student's Name: _____ Date of Birth:_____

Parent / Guardian:_____

Student's age at time of diagnosis: _____ Type:_____(1 or 2)

Contact phone numbers: (list by order in which calls should be made, and note if it is a parent, friend, or caregiver and whether the number is home and/or work.)

1st			
2nd			
3rd			
4th			
5th			

Monitoring: Target blood glucose _____to _____

□ classroom	□ by self	□
□ nurses office	□ with supervision	□
□ other	□ by trained school staff	□

Treatment:

Lows – below _____	Highs – Above _____
□ call parent	□ call parent
Treat with:	□ Give insulin (see below)
Usual signs:	□ check ketones if above _____

Insulin (☒ your answer below)

□ Yes □ No Will daily insulin be needed in school?

□ Yes □ No Will additional insulin be needed in school at any other time?

If YES to either, identify time, amount and circumstances for administering insulin. (Need physician order to be administered.)

Food

□ Yes □ No Will child participate in school breakfast and/or school lunch?

If YES, will modifications to the regular menu be needed? □ Yes □ No

If YES, fill out medical form for meal modifications

What are usual times for meals/snacks?

Breakfast_____ AM Snack_____ Lunch_____ PM Snack_____

Dinner_____

Exercise:

What are your child's favorite physical activities?

□ Yes □ No Will your child participate in school sports?

Parties and Special Occasions:

□ Yes □ No Do you wish to be contacted before each event?

Additional instructions for the school:

Emergencies:
What do you feel should be treated as an emergency?

Who do you want the school to call in an emergency?

- o Call parent (emergency number: _____)
- o Call health care team (contact number: _____)

Individuals trained to administer glucagon

1. _____

2. _____

Self Care:

Picks finger				
Puts strip in monitor				
Reads monitor				
Records result				
Adjusts food based on result				
Adjust insulin based on result				
Knows which foods to limit				
Can select kind and amount of food				
Helps plan meals and snacks				
Determines amount and type of insulin				
Selects injection site				
Measures insulin				
Injects insulin				
Measures ketones				
Other				

FORM 5: PUMP INFORMATION

Student Name:_____
Pump Name and Model: _____
Pump Resource Person (trouble shooter):_____ Contact #:_____

Type of Insulin	
Blood glucose target range	
Insulin:Carb ratio	
Insulin Correction factor	

Pump skills	**Performs Independently**	**Requires help or supervision**
Counts carbohydrates		
Calculates bolus dose		
Calculates correction dose		
Calculates total dose		
Administer insulin bolus		
Adjusts for exercise		
Disconnects and reconnects tubing		
Inserts new infusion set		
Uses Standard Precautions		
Fills and Primes reservoir		
Trouble shoots alarms appropriately		
Identifies highs and lows		
Problem solves for highs		
Switches to injection if pump malfunctions		

Extra supplies: Where stored:_____
□ infusion set and reservoir
□ tape to secure infusion set
□ items to prep skin – IV prep
□ insulin and syringe (for malfunctions)
□ extra batteries
□ other

Notify Parent (check all that apply**)**
□ soreness and redness at site
□ detachment of dressing /infusion set
□ leakage of insulin
□ injection must be given
□ student has to change site
□ other

FORM 6: RELEASE OF INFORMATION, MEDICATION ORDER, AND PARENT PERMISSION

(Return to the school nurse)

*** * * RELEASE OF INFORMATIOM * * ***

Date: _____

I hereby give my permission to _____(*Physician's Name)* to release information to the staff at _____ (*School's Name*) concerning medications prescribed and their related health information for _____ (Student's Name).

Signature of parent or guardian: _____

*** * * MEDICATION ORDER * * ***

Medication: _____

Directions: _____

Begin Date:_____ Last Dose: _____

Reason for Medication: _____

Signature of Physician: _____

*** * * PERMISSION TO ADMINISTER * * ***

I hereby give my permission for the above named student to take the medication as prescribed at school.

Signature of Parent or guardian:_____

No medication will be given at school until the school receives this completed form with the prescribed medication in a container appropriately labeled by the pharmacy or physician.

Date Received:_____ Signature of School Nurse:_____

INSTRUCTIONS FOR COMPLETING FORM 7: *THE MEDICAL STATEMENT FOR STUDENTS REQUIRING MODIFICATIONS IN SCHOOL MEALS*

1. This form may be completed by a parent but must be signed by a physician if the student with diabetes requires meal modification. *A Major Life Activity* must be circled if the student requires special needs. In many cases it is "eating."
2. If the student does not have a disability it may be signed by a recognized "medical authority" which includes a physician, physician assistant, registered dietitian, registered nurse, or occupational therapist or other health professional specified by the Vermont Department of Education.
3. Check the required meal modification(s) the student needs. Both the modification category and the detailed type of modification should be checked. The more information provided, the better able the school is to meet the student's needs.
4. Food omission is most often needed due to a food allergy. Specify to what extent a food must be avoided. For example: "omit milk as a beverage", "omit foods which have milk or other dairy products as a major ingredient," "milk and all dairy products must be completely omitted from the diet." Food to be substituted**:** Be as specific as is reasonable. Typical substitutions would be: "juice for milk," "any other vegetable for tomatoes," "equivalent menu item which does not contain eggs," "fresh or unsweetened fruit for dessert," etc.
5. Special Utensils refers to special silverware, plates, cups or other items the student needs in order to eat the meal.
6. Other information includes needs which do not directly relate to the modification of a food such as: fluid intake at other than meal time; additional time to eat or specific timing of a meal or snack; feeding techniques.

Note: The responsibility of the Food Service is to accommodate the medical needs of the student, not personal food preferences. When menus are reviewed and appropriate substitutions are offered, the family may choose to occasionally pack a student's lunch.

Once completed, the form should be returned to the Food Service Manager who, with the input of the parents and appropriate school staff, will establish the necessary routines to provide the modified meal. The original copy of the Medical Statement should be kept on permanent file in the nurse's office or food service office. It remains in effect until replaced or inactivated.

Form 7: Medical Statement for Students Requiring Modifications in School Meals

Name of Student:	Birth date:
Name of Parent/Guardian:	Daytime Phone:

Disability or Medical Condition requiring modification of school meals: *Diabetes*	**Major life activity affected** by student's disability *(please circle all that apply)*: Caring for one's self, eating, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, working.

Required Meal Modification *(check all which apply):*

_____RESTRICTED NUTRIENT	_____INCREASED NUTRIENT	_____MODIFIED TEXTURE
_____ Calorie _____ Controlled Carbohydrate _____ Protein _____ Sodium _____ Fat/Cholesterol	_____ Calorie _____Protein _____Fiber _____Other:	Describe required modification:

_____FOODS TO BE OMITTED FROM THE DIET

List all that apply:	Foods that may be substituted:

Special Utensils Needed:

Tube Feeding Required:

Other Accommodations needed:

For student with a disability:

Signature of Physician: _____ Date: _____

For non-disabled student:

Signature of Other Medical Authority: _____ Date: _____

NOTE: To complete this form, use the single page version available in the appendices on page 109.

CHAPTER 7. Regulations Affecting School Populations

FEDERAL LEGISLATION

Federal legislation ensuring non-discrimination of school aged children and adolescents include specific protection for students with diabetes. Section 504 of the Rehabilitation Act of 1973 is a civil rights provision, which prohibits discrimination on the basis of handicap by recipients of federal funds. The law states that "no otherwise qualified individual with handicaps in the United States...shall solely by reason of his or her disability, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance..."

The term "program or activity" includes all programs or activities of the Vermont Department of Education and all schools and school districts receiving federal funds regardless of whether the specific program or activity involved are a direct recipient of federal funds.

SECTION 504

Section 504 identifies an individual with a disability as any person who: "*has a physical or mental impairment which substantially limits participation in one or more of major life activities such as caring for oneself, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, and working."*

Diabetes is a physiological disorder which affects the endocrine system, placing the individual at risk for hypoglycemic and hyperglycemic episodes related to this metabolic dysfunction. Potential fluctuations in blood glucose impact the individual's major life activities as described above. Reasonable accommodations can be planned and documented in a 504 plan by a designated 504 case manager in each school district. Unless other special education issues exist, the case manager should be the school nurse.

The written 504 plan provides for clearly understood and accepted interventions which support the student and school personnel**.** Potential discrimination can best be addressed by education of personnel involved in the day to day life of the student with diabetes.

Guidelines for accommodations under Section 504 of the Rehabilitation Act of 1973

Students with disabilities may be eligible for specific health and education-related accommodations to be made in schools. The elements in the following list may serve as basic guidelines for planning the daily interventions for a student with diabetes in the school setting.

- Monitoring blood glucose (when, where)
- Treating hypoglycemia
- Injecting insulin when necessary
- Eating snacks when necessary
- Participating in the school meal program
- Allowing flexible time for eating meals and snacks
- Allowing free and unrestricted access to water and the bathroom
- Accommodating the student's schedule for absences due to medical appointments
- Participating in physical education (gym class) and other extracurricular activities including field trips

INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA)

IDEA provides federal funds to assist schools in making special education and related services available to eligible students with disabilities. A student with a disability must meet the criteria of one or more of 13 categories and need special education and related services. The IDEA category of "other health impairment" includes diabetes as one of the health conditions listed. To qualify under IDEA, the student's diabetes must also adversely affect educational performance to the point that the student requires special education and related services. Generally, if a student with diabetes does not need special education services, that student is not eligible under IDEA. This student might still be eligible for services under Section 504.

SAMPLE 504 AND ACCOMMODATION PLAN

Student Name: *Mary Jones* Date of Birth: *6/15/96* Date: 9/9/05

Grade: 4 Teacher: Ms. Smith

Date of Disability Determination: *08/15/02* Case Manager: *Susan Doe, RN*

- Mary has Type 1 diabetes. This is a condition in which the pancreas is unable to make insulin. Without insulin, the body cannot change glucose (sugar) into the energy a person needs. To compensate for the lack of natural insulin, she must take daily insulin injections, usually at home but sometimes in school.
- Mary's daily insulin injections must be balanced with her meals, snacks and regular physical activity. To consistently achieve this balance, she must eat daily snacks and meals on a regular schedule. During the school day she must check her blood sugar before lunch, and physical education class, as well as when her body tells her that her blood sugar is low or too high.
- While Mary is achieving independence in self-management of her diabetes, the adults who work with her will need to be supportive and understanding about the daily regimen. Her self-care needs will be integrated into the school day so there are minimal interruptions in the learning environment.
- Mary is generally responsible and independent about her blood sugar monitoring, diet, and necessary equipment. The adults in the school community will help by reminding Mary to bring her diabetes pack to all out-of-school trips and to keep it with her when she is away from the classroom for extended periods of time. Mary will need this reminder especially before special events.
- Mary's blood sugar levels affect the way he/she learns.
- Mary's behavior is related to blood sugar levels. She can feel "racey" and excited when her blood sugar is high or tired and "spacey" when it is low.

- When Mary is excited and/or stressed as in a testing situation, her blood sugar can potentially go up. When her blood sugar is high (over 200) her body responds by trying to decrease this sugar level. She may become thirstier as her body is acting to dilute or flush out the extra sugar. She needs to drink more water and then urinate more frequently.
- The learning environment is altered when Mary must stop an activity to test her blood sugar, go to the bathroom, eat a snack or get a drink of water.
- Mary must continuously remind herself to monitor her blood sugar at appropriate times, to eat/exercise regularly and to bring supplies with her. This self-monitoring is a big task and is a distraction in itself.

I. **Home/School Communication:** To develop parent/student school communications:

1. There will be on going communication between parents and case manager.
2. Parent-teacher meetings will be scheduled at regular times especially at the beginning of the school year and other transition times. Parents want to be contacted immediately if any academic or social concerns arise.
3. Health concerns will be addressed as the need indicates.
4. Consistency is important in Mary's academic plan. Transition meetings including last and current teaching staff, nursing and parents will be scheduled.

II. **<u>Organization/Management</u>:** To modify the instructional day:

1. Mary will need modification of non-academic time (long lunch, extra snack period on occasion).

III. **<u>Alternative Teaching Strategies/Accommodations</u>:** To modify teaching methods:

1. Adjust testing procedures:
   - Mary may need to have open bathroom privileges during standardized tests. She should be seated so she can come and go from the room easily. Please remind her that she can go at anytime despite testing rules.
   - Mary must keep her low kit with equipment and snacks next to her in the testing area.
   - If Mary goes to the bathroom before or during the testing, special accommodations may need to be made to repeat instructions or to lengthen her testing time.
   - Mary may need to have snack at different times and intervals than the other students.

2. Individualize classroom/homework assignments:
   - There will be a need to explain assignments or adjust them if Mary's blood glucose is unusually high or low on certain days. Her level of concentration is affected and she will need accommodations.

3. Repeat or structure instructions for in-class or homework assignments.
   - Mary may miss part of an assignment or a class while testing, in the bathroom or eating his/her snack. Repeating verbal/written instructions will be needed.
   - If Mary's blood sugar is unusually high or low (>250 or < 70), she may feel shaky, slightly disoriented or very distracted. The classroom teacher will need to revisit instructions or concepts she may have missed in class.

The following related aids and services are recommended:

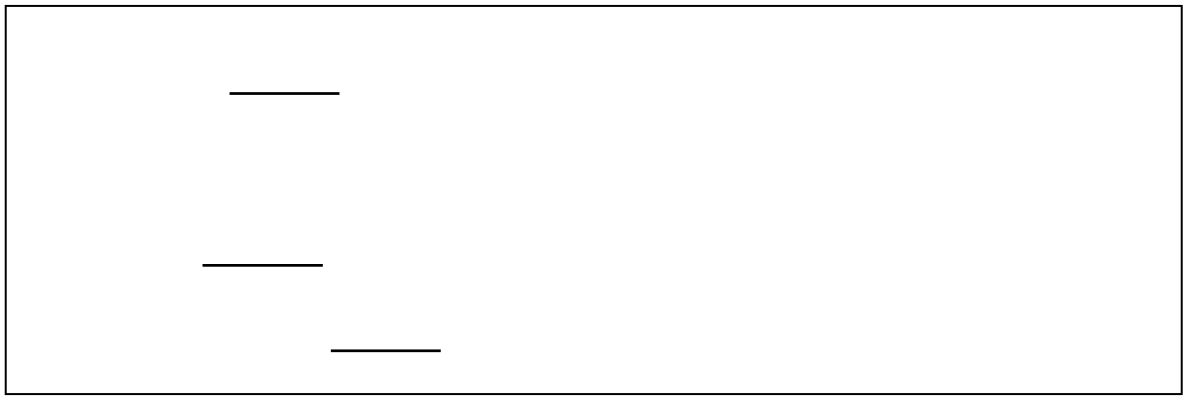
1. Health services: The school nurse will be available on a daily basis to provide support and guidance to Mary and the school staff. A trained substitute nurse will be available if Susan Doe is not in school.
   - Mary's classroom teacher and one other adult staff member will be trained in the administration of Glucagon.
   - Susan Doe, RN, will inform all appropriate teaching staff and cafeteria staff about condition and what to do in an emergency.

2. Equipment and Food Items
   - Mary will carry her own glucometer, finger lancets and glucose strips. She will also carry a low kit with juice, and a snack.
   - There will be extra juice, and snacks kept in the classroom area, the library and in exploratory classes as needed.
   - The nurse's office will have extra juice, crackers, peanut butter and other snacks for Mary and will keep a vial of insulin, extra glucose strips, syringes and ketone strips for urgent use. A Glucagon kit will be kept in the locked medicine cabinet in the nurse's office.
   - Mary's parents will provide all food and equipment to the school. Susan Doe, RN, will be responsible for distributing the food and maintaining the supply

VERMONT

Safe Disposal of Syringes and Lancets

- Find and empty a plastic bottle that has a screw-type cap. Examples: bleach, fabric softener, detergent or shampoo bottles. The #1 plastic soda bottle is recommended because it is more puncture-resistance. It is identified with a "1" inside a triangle of arrows on the bottom of the bottle.
- Label the bottle with a warning "DO NOT RECYCLE".
- After you use a syringe or lancet, drop it into the bottle. Don't break off the needles; drop in the whole syringe and recap the bottle.
- Don't fill the bottle to the top with needles. Leave a few inches of space at the top.
- When you are ready to discard the bottle, tightly close the cap and place heavy tape over the closed cap.
- Discard the bottle in your household trash. Do Not Recycle.



Vermont Department of Health, Diabetes Prevention and Control Program
108 Cherry Street, Burlington, VT 05402

Revised 4/08/04

INTERNET RESOURCES

American Academy of Family Physicians	www.aafp.org
American Academy of Pediatrics	www.aap.org
American Association of Diabetes Educators	www.aadenet.org
American Association for Health Education	www.aahperd.org/aahe
*American Diabetes Association	www.diabetes.org
American Dietetic Association	www.eatright.org
American School Health Association	www.ashaweb.org
Celiac Sprue Association	www.csaceliacs.org
Center for Disease Control, Diabetes Public Health Resource	www.cdc.gov/diabetes
Center for Disease Control: Diabetes Project Children and Diabetes	www.cdc.gov/diabetes/projects/diab_child.htm
Children with Diabetes	www.childrenwithdiabetes.com
Diabetes Action Research and Education Foundation	www.daref.org
Diabetes Exercise and Sports Association	www.diabetes-exercise.org
Helping the Student with Diabetes Succeed	www.ndep.nih.gov/diabetes/pubs/Youth_SchoolGuide.pdf
Insulin Pumpers	www.insulin-pumpers.org
Joslin Diabetes Center	www.joslin.harvard.edu
Juvenile Diabetes Research Foundation International	www.jdrf.org
National Association of School Nurses	www.nasn.org
National Diabetes Education Program	www.ndep.nih.gov/
National Information Center for Children and Youth with Disabilities	www.nichcy.org
New England diabetes camps	www.campcarefreekids.org www.bartoncenter.org www.joslin.harvard.edu/jboston/camp.shtml

Parent to Parent of Vermont	www.Partoparvt.org
Pediatric Adolescent Diabetes Research and Education Foundation	www.padrefoundation.org
Pediatric Endocrinology Nursing Society	www.pens.org
Pediatric Education for Diabetes in Schools	www.pedsonline.org
The Diabetes Monitor	www.mdcc.com
U.S. Department of Agriculture Food and Nutrition Information Center	www.nal.usda.gov/fnic
Vermont Association of Diabetes Educators	www.vpqhc.org/VTADE
Vermont Department of Education	www.state.vt.us/educ
Vermont Department of Health (Recommendations for the Management of Diabetes for Children in School)	www.state.vt.us/health/pubs.htm
Vermont Parent Information Center	www.vtpic.com
Vermont State School Nurses Association	www.vssna.org

- The American Diabetes Association's website has a number of computer programs that can be downloaded and used for education purposes. The programs are listed under *School Discrimination*.

Carbohydrate Counting

What is a carbohydrate?

Carbohydrates are nutrients found in many foods. Carbohydrates are the body's preferred source of energy and therefore have the biggest impact on blood glucose. Foods with carbohydrates include starches, grains, bread, pasta, cereal, fruit, vegetables, legumes, milk, yogurt, and any food or beverage that contains sugar or flour. Meats or proteins and fats have very little or no carbohydrates.

Are carbohydrates healthy?

Healthy foods with carbohydrates include fruits, vegetables, whole-grains, and low fat milk. They should be consumed daily. Other foods with carbohydrates such as soda, candy, fast foods, donuts, cookies and cakes are high in processed sugar and fat and therefore provide little nutrition. These foods should be used in moderation.

How do carbohydrates affect blood glucose levels?

Most of the carbohydrates that are eaten are broken down to glucose or sugar and absorbed in the blood stream to be used for energy. When blood glucose levels increase, the pancreas makes insulin. Insulin helps move glucose into cells.

Sources of carbohydrates

<u>Starches/Grains (each serving has 15 grams of carbohydrates)</u>

1 slice bread or small roll
1/3 cup cooked pasta or rice
¾ cup unsweetened cereal
½ cup corn or peas
6 saltine crackers
1 6" tortilla or taco shell
½ of a hamburg/hotdog bun
½ of a small bagel

Milk Products (each serving has 12 grams of carbohydrates)

1 cup milk
½ cup chocolate milk
1 cup *lite* yogurt
½ cup ice cream
½ cup low sugar pudding

Fruits (each serving has 15 grams carbohydrates)

1 small apple, orange, pear, banana
15 grapes
1 cup fresh berries or melon
½ cup juice
½ cup canned fruit
2 tbsp dried fruit

Vegetables (each serving has 5 grams carbohydrates)

1 cup raw vegetable
½ cup cooked vegetable (except corn, peas, potatoes, or dried beans)
½ cup tomato juice

Other foods and approximate grams of carbohydrate

1 cup soup – 15 grams
1 cup casserole - 30 grams
1 Tbsp jelly – 15 grams
2 Tbsp peanut putter – 6 grams

Vermont Association
====== of ======
Diabetes Educators
December 2005

Directory of Diabetes Education Programs in Vermont

Directory of Diabetes Education Programs in Vermont

(Note: Most programs listed below are recognized by the American Diabetes Association. Please check directly with contact people below to inquire whether the program is ADA-recognized.)

BRATTLEBORO HOSPITAL/SVHHA

Contact: Houghton Smith, RN, CDE
Location: 17 Belmont Ave.
Brattleboro, VT 05301
802-251-8429

CENTRAL VERMONT MEDICAL CENTER

Contact: Sylvia Gaboriault, MS, RD, CDE
Ilene Siegel, RD,CDE
Amanda Melville, RN
Connie Lanphear, RN

(802) 371-5945 or 371-4152
(802) 371-5367 (fax)
Sylvia.Gaboriault@hitchcock.org

Location: 130 Fisher Road
Berlin, Vermont 05602

Program: **Outpatient Services for Diabetes Education**
Clinic is open weekdays for any individual in need of information regarding diabetes self-management education or nutritional consultation.

Program: **Self-Management and Diabetes Group Education Program**
This 12-hour series is ongoing throughout the year and covers diabetes etiology, medication and insulin administration, nutritional management, glucose monitoring, foot care, long and short term complications. The classes are open to any individual with diabetes and/or their significant others. Individual counseling sessions with a CDE/RD and a CDE/RN are available with this program.

COPLEY HOSPITAL DIABETES EDUCATION PROGRAM

Contact: Loretta Schneider, RN, CDE
Nancy Wagner, RD,CDE
(802) 888-8226 for registration

Location: Copley Hospital
Outreach Department
528 Washington Highway
Morrisville, Vermont 05661

Program: **One-on-one counseling and gestational diabetes education** by appointment.

DIABETES CENTER OF THE LAMOILLE VALLEY AT JOHNSON HEALTH CLINIC

Contact: Dorothy Malone-Rising, MS, RN-CS, ANP, CDE
Cindy Storey, office manager
(802) 635-6689
(802) 635-7435 (fax)
Dodie@pwshift.com
www.diabetes-vermont.com

Location: 384 Lower Main West
P.O. Box 318
Johnson, VT 05656

Program: **Introduction to Diabetes Management**
Individual instruction on Basic Survival Skills for the newly diagnosed diabetic and family members, including basic nutrition, self-glucose monitoring, the role of exercise and medications, and avoiding and treating high and low sugar levels.

Program: **Diabetes and You: A Self-Management Education Series For People With Diabetes And Their Families**
This group education program, recognized by the American Diabetes Association (ADA), consists of five 2 hour sessions preparing people to manage their diabetes. This program is appropriate for people with type 1, type 2 or gestational diabetes. Faculty includes a Nurse Practitioner and Registered Dietitian, both Certified Diabetes Educators. Patients may enter the program through self referral or by

referral of their medical provider. Participants receive a comprehensive assessment prior to participation, and are invited to a reunion session six weeks after completing the course.

Program: **Individual Outpatient Diabetes Education**
Covers the content of the group education program when group education is not appropriate. Available by appointment.

Program: **Insulin Start and Adjustment**
Individual instruction is offered for the initiation of insulin therapy. In addition, frequent contact is available with the Nurse Practitioner/Certified Diabetes Educator to adjust insulin doses to achieve tight control in collaboration with the primary care provider.

Program: **Insulin Pump Program**

Intensive individual preparation for and training in the use of Continuous Subcutaneous Insulin Infusion pump for the management of diabetes.

Program: **Diabetes Support Group**

Meets the 3rd Thursday of each month from 6-8 PM. Contact the office for details.

DIABETES EDUCATION AND MANAGEMENT IS COVERED BY MOST INSURANCE PROGRAMS. Sliding fee scale available for those without insurance coverage.

FLETCHER ALLEN HEALTH CARE

Children's Specialty Center at Vermont Children's Hospital

Contact: PJ Zimakas, MD
Mary Alice Giannoni, MSN, ANP, CDE
Rebecca Beaudoin, RN,CDE
Alison Precourt, RD,CD,CDE
Rebecca Currier, PhD
(802) 847-6200
(802) 847-5364 (fax)
mary.giannoni@vtmednet.org

Location: Children's Specialty Center at Fletcher Allen Health Care
Ambulatory Care Center
Burlington, VT 05401

Program: **Diabetes Care Program for Children and Adolescents**

A comprehensive orientation and education program for children and adolescents with diabetes and their families provided in an out-patient setting. The programs are taught by certified diabetes educators.

Vermont Regional Diabetes Center at Fletcher Allen Health Care

Contact: Kristin Magnant, RN (VRDC Care Coordinator)

Jack Leahy, MD
Muriel Nathan, MD,
Afshin Salsali, MD
Joel Schnure, MD

Ann Gotham, NP
Margaret Costello, FNP, CDE

Lisa Bolduc-Bissell, RN ,CDE
Krissy Botlon, RD, CDE
Rhonda Lapidow, RN, CDE

(802) 847-4576
(802) 847-2226 fax

Location: University Health Center Campus
1 South Prospect Street
Burlington, VT 05401

Program: The Vermont Regional Diabetes Center (VRDC) uses a multi-disciplinary approach to teaching people about diabetes. Patients of the VRDC have the opportunity to meet with physicians, nurse practioners, registered nurses, registered dietitians, and certified diabetes educators. Individual counseling as well as group classes are available.

Diabetes Survival Skills

This class is designed for people with newly diagnosed type 2 diabetes. It covers basic management of diabetes including blood glucose monitoring, nutrition, and exercise. A glucometer will be provided at no cost to the participant. This class is offered several times monthly and is taught by certified diabetes educators.

Living Well with Diabetes

This class is a nationally accredited course designed for people with type 2 diabetes and their support person – whether newly diagnosed or seeking more education to successfully self-manage their care. This course consists of either a series of evening classes or day classes. At the completion of the course, there is an individual follow-up session with either a nurse or dietitian, depending on individual needs. The instructors are certified diabetes educators in the fields of nursing and nutrition.

Is An Insulin Pump For You?

This pump information class is designed to inform participants about the various pumps and pump accessories on the market. A hands-on demonstration is an integral part of this class. Literature is provided so that participants may do "research" at home. In addition to the hardware associated with pumps, there is also a discussion on the pros and cons of pump therapy, and the skills that prospective pump patients must have before they are granted permission to proceed with obtaining a pump. This class is offered once a month for 2 hours.

Count Your Carbs and Eat Them Too!

This class is for people who need or want to learn carbohydrate counting as a meal planning approach. Participants will learn basic skills to help them determine carbohydrate intake throughout the day. Discussion will focus on carbohydrate food groups, serving sizes, helpful tools and resources. This class is offered in conjunction with "Is an Insulin Pump for you" and is taught by certified diabetes educators.

Insulin Pump School

The insulin pump program is offered to patients pursuing pump therapy. The program includes the mechanical instruction of the pumps, saline trials, initiation of insulin, blood glucose monitoring and general instruction on pump management of diabetes. This program is offered through individual and group classes and is taught by certified diabetes educators. Participants must first attend "Is an Insulin Pump for you". There are various levels of classes for the insulin pump school which are offered monthly.

Clinical Trial Unit

Clinical research focused on people with diabetes providing health care, laboratory testing, nutritional counseling, blood glucose monitoring supplies, and study related medications. Contact Autumn Bolus at (802) 847-8908.

Inpatient Education at Fletcher Allen Health Care

Contact: Laurinda Poirier-Solomon RN, MPH, CDE

Contact specific in-patient care unit: 847-8675

Location: Fletcher Allen Health Care In-patient units at MCHV and FAH campuses

Program: **Diabetes Education for In-patients**

Individual diabetes counseling.

GIFFORD MEDICAL CENTER

Contact: Sherry Barnard, BSN, RN
Diabetes Coordinator
(802) 728-2295
sbarnard@giffordmed.org

Jennifer Stratton, RD-by appointment: 802-728-2260
jstratton@giffordmed.org

Jane McConnell RPh,
jmcconnell@giffordmed.org

(802) 728-4441
(802) 728-2201 fax

Location: 45 South Main St
Randolph, VT 05060

Program: **Diabetes Outpatient Clinic**
The hours of clinic are Tuesdays, 8:00-4:30 PM and Thursdays 8:00-4:30 PM for any patient in need of diabetes education. Call for information about comprehensive diabetes courses and survival skills classes.

Program: **Diabetic Support Group**
The group meets monthly from September through May at Gifford Medical Center
from 3:30 PM to 4:30 PM. Format varies from group discussions, guests speakers, films.

GREEN MOUNTAIN NUTRITION ASSOCIATES

Contact: Janice Waterman, RD, CDE
(802) 476-7607
(802) 229-5076 (fax)
gmnwaterman@aol.com

Sue Johansen, RD, CDE
(802) 476-7607
(802) 244-4122 (fax)
gmnajoha@vtlink.net

Location: The Medicine Shoppe
20 South Main St
Barre, Vt 05641
(802) 476-7607

Program: **Individualized Diabetes Management and Education**
Registered dietitians and certified diabetes educators specializing in diabetes and cardiovascular disease. Diabetes education and medical nutrition therapy tailored to meet individual needs. Home visits scheduled if needed.

MOUNT ASCUTNEY HOSPITAL AND HEALTH CARE CENTER

Contact: Jennifer Wilson, RN, CDE
Jennifer.M.Wilson@Hitchcock.org
(802) 674-7198

Location: 289 Country Road
Windsor, Vt 05089
(802) 674-7300
(802) 674-7314 (fax)

Program: **Mt. Ascutney Hospital and Health Center Outpatient Clinic**
Individualized education provided via physician referral to RN and RD as a component of the Diabetes Self Management Program.

Program: **Support Group**
Held at Mt. Ascutney Hospital every second Wednesday morning at 10:30 a.m. – 11:30 a.m. Facilitated by Elizabeth Smurkowski, RD.

Program: **Diabetes Survival Skills**

Group educational program for patients and families. Survival Skills is a 3 hour program offered once a month. Fit and Health Kidstyle is a prevention program for children age 8 – 12 and their parents. Instructors include a Nurse, Dietitian, Physician, and Exercise Specialist.

NORTH COUNTRY HOSPITAL

Contact: Anick Desorcy, RD,CD Diabetes nutrition educator
(802) 334-4155
adesorcy@nchsi.org

Brenda Wierschke, RD,CD Support groups
(802) 334-3210 ext 329

Winnie Jones, RN Diabetes nurse educator
(802) 334-3263
wjones@nchsi.org

Joan Wheeler, RN, CDE Diabetes education coordinator
(802) 334-3264
jwheeler@nchsi.org

Location : North Country Hospital
189 Prouty Drive
Newport, VT 05855
(802) 334-4155

Program: **Diabetes Education Program (group education)**
Healthy Living with Diabetes – *Diabetes Basics*
A 3 hour introduction to diabetes. Referral by physician.

Healthy Living with Diabetes – *Beyond Basics*
A 12 hour comprehensive diabetes education course. Referral by physician.

One on One Counseling
With a diabetes nurse educator and /or clinical dietitian.
Individualized treatment plans. Referral by physician.

Support Group for Individuals with Type 2 Diabetes and their Families

Monthly meetings held the 2nd Monday of every month from 6:00 pm to 7:00 pm at North Country Hospital in the Meeting Room.

NORTHEAST VERMONT REGIONAL HOSPITAL

Contact: Virginia Flanders, RD, CD, CDE
(802) 748-7433
(802) 748-7302 fax

Location: Northeast Vermont Regional Hospital
PO Box 905
St. Johnsbury, VT 05819

Program: **Living with Diabetes (group session)**
Offered 3 times a year. Six 2 hour sessions

Diabetes Survival Class
For people with newly diagnosed diabetes. Offered twice a month,

Individual outpatient diabetes education by appointment.

NORTHWEST MEDICAL CENTER

Contact: Deborah Robertson, RN, BSN, CDE
Kay Tran, MS, RD, CDE

(802) 524-1031
(800) 696-0321
(802) 524-1238 fax

Location: P.O. Box 1370
Fairfield Street
St Albans, VT 05478

Program: **Individual outpatient diabetes education by appointment**.

Program: **Diabetes and You: A self-management education series for people with diabetes and their families**

This group education program consists of five 2 hour sessions preparing people to manage their diabetes. Faculty includes a Nurse who is a Certified Diabetes Educator, a Registered Dietitian, Physical Therapist, and Behavioral Therapist. Four follow-up sessions are held over the year following the program. Patients may enter the program through self referral or by referral from their medical provider.

Program: **Insulin start**
Individual instruction is offered for the initiation of insulin therapy.

Program: **Endocrine Clinic**
4th Wednesday of each month patients are seen by a comprehensive team including an Endocrinologist from Fletcher Allen Health Care Center, RN/CDE and RD.

Program: **Franklin County Support Group**
Serving adults with diabetes. Meetings are held the third Monday of each month at 11:30 and 5:00 at Northwestern Medical Center. Free luncheon or dinner is provided.

Program: **Pump Pals Support Group**
Meets the 3rd Monday of each month at 5:00 PM, includes a free dinner.

Program: **Gestational Diabetes Education**

PORTER MEDICAL CENTER

Contact: Elaine Coon, RN, CDE
Staff Development Coordinator
(802) 388-4723
(802) 388-4799 fax
ECoon@portermedical.org

Location: 115 Porter Drive
Middlebury, VT 05753

Program: **Individual nutritional consultations**
Call 802- 388-4701 ext 776

Program: **Basic Diabetes Education Program**:
This three-hour class is offered twice a month for people with newly diagnosed diabetes and their families.

Program: **Support Group**
Bristol, VT: meets 3rd Wednesday of each month 1-3 pm.
Middlebury, VT: meets 2nd Thursday of each month 7:00 pm – 8:30 pm.

RUTLAND REGION DIABETES and ENDOCRINOLOGY CENTER

Contact: Donna Hunt, RD, CDE, Program Coordinator
dhunt@rrmc.org
(802) 775-2703

Judy Fuller, RN
jfuller@rrmc.org
(802) 775-2703

Sarah Narkewicz, RN MS CDE (special projects)
snarkewicz@rrmc.org
(802) 747-3770

Mary Robinson, FNP, Nurse Practitioner
mrobinson@rrmc.org
(802) 775-7844

Medical Director: Phil Lapp, MD, FACE Endocrinologist
(802) 775-7844

Location: 8 Albert Cree Drive
Rutland, Vt 05701

Program: **Diabetes: The Basics of Self Care** (Group Class and Individual Sessions)
RRMC offers an A.D.A. recognized comprehensive diabetes education program, including one-on-one sessions or group classes. The course covers: defining diabetes, nutrition, medications, monitoring, exercise, stress reduction, and acute and chronic complications.

Program: **Adult Clinic**
Offered weekdays with ongoing support by nurse and dietitian team.

Program: **Pediatric Clinic**
Offered quarterly with ongoing support by a nurse-dietitian team. Medical care provided by Philip Lapp, MD and Mary Robinson, FNP.

Program: **Gestational Program**
Meter loaner program and nutrition education available.

Program: **Insulin Pump Program**
Education and ongoing support and management provided for patients choosing insulin pump therapy.

Program: **Support Groups** – call 802-775-2703 for meeting time/place.
Adult support group meets the 4th Monday of the month.
Insulin Pump support group meets the third Tuesday of the month.
"Sugar Bugs" pediatric support group for families affected by diabetes available through a community member.

SOUTHWESTERN VERMONT MEDICAL CENTER

Contact: Office:
(802) 447-5315
(802) 447-5098(fax)
PEC@phin.org

Pat Carpenter, RN, CDE
(802) 447-5315
Paula Haytko, BA, RN, CDE
(802) 447-5650
Tim Marr, MS, RD, CDE
(802) 447-5578
Rachel Rodney, RD
(802) 447-5577

Location: 140 Hospital Drive
Room 308, Medical Office Building
Bennington, VT 05201
(Mailing address: 100 Hospital Drive, Box 12, Bennington, VT 05201)

Program: **Diabetes Education Program**
Individual and group instruction for patients, their families and significant others to learn self-management of diabetes. Also available are classes on insulin instruction, insulin pump therapy, and gestational diabetes. All sessions by appointment.

Program: **Diabetes Support Groups**
Meets the 4th Tuesday of every month from 6:30 pm to 7:30 pm at the Manchester Elementary School. No meetings in the summer (June-August). Periodic evening support group programs are held in Bennington. Notices appear in all the local newspapers and in the Wellness Connection.

SPRINGFIELD HOSPITAL

Contact: Marcia Manner, RNC, CDE
Diabetes Education Coordinator
(802) 885-7508
mmanner@springfieldhospital.org

Barbara Bye, RD, CDE
(802) 885-7670
bbye@springfieldhospital.org

(802) 885-7367 fax

Location: P.O. Box 2003
Springfield, VT 05156

Program: **Springfield Hospital Diabetes Education Program**
Individual outpatient instruction by physician referral or self-referral. Individual in-patient education for newly diagnosed patients with outpatient follow-up as needed, and for patients with history of diabetes.
Group classes held periodically from spring through fall.

Program: **Support Group**
Support group meets on the first Wednesday of each month (except December) at 10:00 AM at Springfield Hospital.

Program: **Community Lectures / Blood glucose screening programs**

VETERANS ADMINISTRATION

Contact: Deborah Blood, RD, CDE
Lou Ann Merrill, RN
Toll Free: (866) 687-8387
(802) 295-9363 x 5796
(802) 296-6416 fax

Location: White Mountain Firm
215 North Main St
White River Junction, Vermont 05009-0001

Programs: **Diabetes Education Series -** American Diabetes Association recognized program. Eligible veterans may participate in a comprehensive diabetes education program (including family members) or come to individual appointments with a registered dietitian or nurse educator.

Program: **Support Group**: Every third Monday of the month, 11:00 a.m. – noon. Group meets in the patient education room across from the pharmacy. For more information call (802) 295-9363 x 5796.

DARTMOUTH-HITCHCOCK MEDICAL CENTER PEDIATRIC DIABETES PROGRAM

Contact: Samuel J. Cassella, MD
Ann S. Christiano, ARNP, CDE
Maura Jones, RD, CDE
Alyson Percy, RN
Patricia Ryan, ARNP
Mark Detzer, Ph.D
(603) 653-9877
(603) 650-0907 (fax)

Location: Pediatric Endocrinology
One Medical Center Drive
Lebanon, NH 03756-0001

Program: DMHC has a multidisciplinary Pediatric Diabetes clinic, staffed by a Pediatric Endocrinologist, two Nurse Practitioners, Pediatric Nutritionist, Social Worker and Clinical Psychologist. This team approach allows us to address many of the issues unique to children with diabetes and their families. We provide training and support for intensive management including pumps.

Medical Statement for Children Requiring Modifications in School Meals

Name of Student:	Birth date:
Name of Parent/Guardian:	Daytime Phone:

Disability or Medical Condition requiring modification of school meals:	**Major life activity affected** by student's disability *(please circle all that apply)*: caring for one's self, eating, performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, working

Required Meal Modification *(check all which apply):*

_____RESTRICTED NUTRIENT	_____INCREASED NUTRIENT	_____MODIFIED TEXTURE
_____ Calorie _____ Controlled Carbohydrate _____ Protein _____ Sodium _____ Fat/Cholesterol	_____ Calorie _____Protein _____Fiber _____Other:	Describe required modification:

_____FOODS TO BE OMITTED FROM THE DIET

List all that apply	Foods that may be substituted

Special Utensils Needed:	
Tube Feeding Required:	
Other Accommodations needed:	
For student with a disability:	Signature of Physician: Date:
For non-disabled student:	Signature of Other Medical Authority Date:

Diabetes Care in the School and Day Care Setting

AMERICAN DIABETES ASSOCIATION

Diabetes is one of the most common chronic diseases of childhood. There are about 176,000 individuals <20 years of age with diabetes in the U.S. (1). The majority of these young people attend school and/or some type of day care and need knowledgeable staff to provide a safe school environment. Both parents and the health care team should work together to provide school systems and day care providers with the information necessary to allow children with diabetes to participate fully and safely in the school experience.

DIABETES AND THE LAW

— Federal laws that protect children with diabetes include Section 504 of the Rehabilitation Act of 1973, the Individuals with Disabilities Education Act of 1991 (originally the Education for All Handicapped Children Act of 1975), and the Americans with Disabilities Act. Under these laws, diabetes has been considered to be a disability, and it is illegal for schools and/or day care centers to discriminate against children with disabilities. In addition, any school that receives federal funding or any facility considered open to the public must reasonably accommodate the special needs of children with diabetes. Indeed, federal law requires an individualized assessment of any child with diabetes. The required accommodations should be provided within the child's usual school setting with as little disruption to the school's and the child's routine as possible and allowing the child full participation in all school activities.

Despite these protections, children in the school and day care setting still face discrimination. For example, some day care centers may refuse admission to children with diabetes, and children in the classroom may not be provided the assistance necessary to monitor blood glucose and may be prohibited from eating needed snacks. The American Diabetes Association works to ensure the safe and fair treatment of children with diabetes in the school and day care setting (www.diabetes.org/schooldiscrimination).

Diabetes care in schools

Appropriate diabetes care in the school and day care setting is necessary for the child's immediate safety, long-term well being, and optimal academic performance. The Diabetes Control and Complications Trial showed a significant link between blood glucose control and the later development of diabetes complications, with improved glycemic control decreasing the risk of these complications. To achieve glycemic control, a child must monitor blood glucose frequently, follow a meal plan, and take medications. Insulin is usually taken in multiple daily injections or through an infusion pump. Crucial to achieving glycemic control is an understanding of the effects of physical activity, nutrition therapy, and insulin on blood glucose levels.

To facilitate the appropriate care of the student with diabetes, school and day care personnel must have an understanding of diabetes and must be trained in its management and in the treatment of diabetes emergencies. Knowledgeable trained personnel are essential if the student is to avoid the immediate health risks of low blood glucose and to achieve the metabolic control required to decrease risks for later development of diabetes complications. Studies have shown that the majority of school personnel have an inadequate understanding of diabetes and that parents of children with diabetes lack confidence in their teachers' ability to manage diabetes effectively. Consequently, diabetes education must be targeted toward day care providers, teachers, and other school personnel who interact with the child, including school administrators, school coaches, school nurses, health aides, bus drivers, secretaries, etc. Current recommendations and up-to-date resources regarding appropriate care for children with diabetes in the school are universally available to all school personnel.

The purpose of this position statement is to provide recommendations for the management of children with diabetes in the school and day care setting.

GENERAL GUIDELINES FOR THE CARE OF THE CHILD IN THE SCHOOL AND DAY CARE SETTING

I. Diabetes Medical Management Plan

An individualized Diabetes Medical Management Plan should be developed by the parent/ guardian and the student's diabetes health care team. Inherent in this process are delineated responsibilities assumed by all parties, including the parent/guardian, the school personnel, and the student. These responsibilities are outlined in this position statement. The Diabetes Medical Management Plan should address the specific needs of the child and provide specific instructions for each of the following:

1. Blood glucose monitoring, including the frequency and circumstances requiring blood glucose checks.
2. Insulin administration (if necessary), including doses/injection times prescribed for specific blood glucose values and the storage of insulin.
3. Meals and snacks, including food content, amounts, and timing.
4. Symptoms and treatment of hypoglycemia (low blood glucose), including the administration of glucagon if recommended by the student's treating physician.
5. Symptoms and treatment of hyperglycemia (high blood glucose).

6. Checking for ketones and appropriate actions to take for abnormal ketone levels, if requested by the student's health care provider.

Figure 1 includes a sample Diabetes Medical Management Plan. For detailed information on the symptoms and treatment of hypoglycemia and hyperglycemia, refer to the *Medical Management of Type 1 Diabetes* (2). A brief description of diabetes targeted to school and day care personnel is included in the APPENDIX; it may be helpful to include this information as an introduction to the Diabetes Medical Management Plan.

II. Responsibilities of the various care providers

A. The parent/guardian should provide the school or day care provider with the following:

1. All materials and equipment necessary for diabetes care tasks, including blood glucose monitoring, insulin administration (if needed), and urine or blood ketone monitoring. The parent/guardian is responsible for the maintenance of the blood glucose monitoring equipment (i.e., cleaning and performing controlled testing per the manufacturer's instructions) and must provide materials necessary to ensure proper disposal of materials. A separate logbook should be kept at school with the diabetes supplies for the staff or student to record blood glucose and ketone results; blood glucose values should be transmitted to the parent/guardian for review as often as requested.
2. Supplies to treat hypoglycemia, including a source of glucose and a glucagon emergency kit, if indicated in the Diabetes Medical Management Plan.
3. Information about diabetes and the performance of diabetes-related tasks.
4. Emergency phone numbers for the parent/guardian and the diabetes health care team so that the school can contact these individuals with diabetes-related questions and/or during emergencies.
5. Information about the student's meal/snack schedule. The parent should work with the school to coordinate this schedule with that of the other students as closely as possible. For young children, instructions should be given for when food is provided during school parties and other activities.
6. In most locations and increasingly, a signed release of confidentiality from the legal guardian will be required so that the health care team can communicate with the school. Copies should be retained both at school and in the health care professionals' offices.

B. The school or day care provider should provide the following:

1. Training to all adults who provide education/care for the student on the symptoms and treatment of hypoglycemia and hyperglycemia and other emergency procedures. An adult and back-up adult(s) trained to *1*) perform fingerstick blood glucose monitoring and record the results; *2*) take appropriate actions for blood glucose levels outside of the target ranges as indicated in the student's Diabetes Medical Management Plan; and *3*) test the urine or blood for ketones, when necessary, and respond to the results.
2. Immediate accessibility to the treatment of hypoglycemia by a knowledgeable adult. The student should remain supervised until appropriate treatment has been administered, and the treatment should be available as close to where the student is as possible.
3. If indicated by the child's developmental capabilities and the Diabetes Medical Management Plan, an adult and back-up adult(s) trained in insulin administration.
4. An adult and back-up adult(s) trained to administer glucagon, in accordance with the student's Diabetes Medical Management Plan.
5. A location in the school to provide privacy during blood glucose monitoring and insulin administration, if desired by the student and family, or permission for the student to check his or her blood glucose level and to take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if indicated in the student's Diabetes Medical Management Plan.
6. An adult and back-up adult(s) responsible for the student who will know the schedule of the student's meals and snacks and work with the parent/guardian to coordinate this schedule with that of the other students as closely as possible. This individual also will notify the parent/guardian in advance of any expected changes in the school schedule that affect the student's meal times or exercise routine. Young children should be reminded of snack times.
7. Permission for the student to see the school nurse and other trained school personnel upon request.
8. Permission for the student to eat a snack anywhere, including the classroom or the school bus, if necessary to prevent or treat hypoglycemia.
9. Permission to miss school without consequences for required medical appointments to monitor the student's diabetes management. This should be an excused absence with a doctor's note, if required by usual school policy.
10. Permission for the student to use the restroom and have access to fluids (i.e., water) as necessary.
11. An appropriate location for insulin and/or glucagon storage, if necessary.

An adequate number of school personnel should be trained in the necessary diabetes procedures (e.g., blood glucose monitoring, insulin and glucagon administration) and in the appropriate response to high and low blood glucose levels to ensure that at least one adult is present to perform these procedures in a timely manner while the student is at school, on field trips, and during extracurricular activities or other school-sponsored events. These school personnel need not be health care professionals.

The student with diabetes should have immediate access to diabetes supplies at all times, with supervision as needed. Provisions similar to those described above must be available for field trips, extracurricular activities, other school-sponsored events, and on transportation provided by the school or day care facility to enable full participation in school activities.

It is the school's legal responsibility to provide appropriate training to school staff on diabetes-related tasks and in the treatment of diabetes emergencies. This training should be provided by health care professionals with expertise in diabetes unless the student's health care provider determines that the parent/guardian is able to provide the school personnel with sufficient oral and written informa-

Date of Plan _____ **Diabetes Medical Management Plan** Effective Dates_____

This plan should be completed by the student's personal health care team and parents/guardian. It should be reviewed with relevant school staff and copies should be kept in a place that is easily accessed by the school nurse, trained diabetes personnel, and other authorized personnel.

Student's Name _____ DOB_____ Date of Diabetes Diagnosis _____

Grade_____ Homeroom Teacher_____ Physical Condition: Diabetes Type 1 Diabetes Type 2

Contact Information

Parent/Guardian #1 _____ Address_____

Phone: Work_____ Home_____ Cell_____

Parent/Guardian #2_____ Address_____

Work_____ Home_____ Cell_____

Student's Doctor/Health Care Provider:

Name_____ Address_____

Phone:_____ Emergency Number:_____

Other Emergency Contacts:

Name_____ Relationship_____

Phone: Work_____ Home_____ Cell_____

Notify parents/guardian or emergency contact in the following situations:_____

_____

_____

Blood Glucose Monitoring

Target range for blood glucose is 70-150 70-180 Other

Usual times to check blood glucose:_____

Times to do extra blood glucose checks (circle all that apply)

Before exercise After exercise

Student exhibits symptoms of hyperglycemia Student exhibits symptoms of hypoglycemia

Other (explain)_____

Can student perform own blood glucose? Yes No

Exceptions:_____

_____

Type of blood glucose meter student uses: _____

Insulin

Usual lunchtime dose:_____

Base does of Humalog/Novolog/Regular Insulin at lunch (circle type of rapid-/short-acting insulin used) is _____ units or does flexible dosing using

_____ units/_____ grams carbohydrate.

Use of other insulin at lunch (circle type of insulin used): intermediate/NPH/lente _____ units or basal/Lantus/Ultralente _____units.

Insulin Correction Doses

Parental authorization should be obtained before administering a correction dose for high blood glucose levels: Yes No

_____ units if blood glucose is _____ to _____ mg/dl _____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl _____ units if blood glucose is _____ to _____ mg/dl

_____ units if blood glucose is _____ to _____ mg/dl

Figure 1—*Diabetes Medical Management Plan.*

Can student give own injections? Yes No

Can student determine correct amount of insulin? Yes No

Can student draw correct dose of insulin? Yes No

_____Parents are authorized to adjust the insulin dosage under the following circumstances_____

_____

For Students With Insulin Pumps:

Type of pump:_____ Basal rates: _____ 12 a.m. to _____

_____ _____ to _____ _____ _____ to _____

Type of insulin in pump: _____

Type of infusion set: _____

Insulin/carbohydrate ratio: _____ Correction factor: _____

Student pump abilities/skills _____ Needs assistance: _____

Count carbohydrates:	Yes	No
Bolus correct amount for carbohydrates consumed	Yes	No
Calculate and administer corrective bolus	Yes	No
Calculate and set basal profiles	Yes	No
Calculate and set temporary basal rate	Yes	No
Disconnect pump	Yes	No
Reconnect pump at infusion set	Yes	No
Prepare reservoir and tubing	Yes	No
Insert infusion set	Yes	No
Troubleshoot alarms and malfunctions	Yes	No

For Students Taking Oral Diabetes Medication:

Type of medication: _____ Timing: _____

Other medications: _____ Timing: _____

Meals and Snacks Eaten at School

Is student independent in carbohydrate calculations and management? Yes No

Meal/snack _____ Time: _____ Food content/amount _____

Breakfast _____

Mid-A.M. snack _____

Lunch _____

Mid-P.M. snack _____

Dinner _____

Snack before exercise? Yes No

Snack after exercise? Yes No

Other times to give snacks and content/amount: _____

Preferred snack foods: _____

Foods to avoid, if any: _____

FIG. 1—*Continued*

Instructions for when food is provided to the class (e.g., as part of a class party or food sampling event): _____

_____

Exercise and Sports

A fast-acting carbohydrate such as _____ should be available at the site of exercise or sports.

Restrictions on activity if any _____

Student should not exercise if blood glucose level is below _____ mg/dl or above _____ mg/dl or if a moderate to large urine ketones are present.

Hypoglycemia (Low Blood Sugar)

Usual symptoms of hypoglycemia: _____

Treatment of hypoglycemia: _____

Glucagon should be given if the student is unconscious, having a seizure (convulsion), or unable to swallow.

Route _____, Dosage _____, site for glucagon injection: _____arm, _____thigh, _____other.

If Glucagon is required, administer it promptly, then call 911 or other emergency assistance and the parents/guardian.

Hyperglycemia (High Blood Sugar)

Usual symptoms of hyperglycemia: _____

Treatment of hyperglycemia: _____

Urine should be checked for ketones when blood glucose level are above _____ mg/dl.

Treatment for Ketones: _____

Supplies to Be Kept at School:

_____ Blood glucose meter, blood glucose test strips, batteries for meter

_____ Lancet device, lancets, gloves, etc.

_____ Urine ketone strips

_____ Insulin vials and syringes

_____Insulin pump and supplies

_____ Insulin pen, pen needles, insulin cartridges

_____ Fast-acting source of glucose

_____ Carbohydrate containing snack

_____ Glucagon emergency kit

Signatures

This Diabetes Medical Management Plan has been approved by:

_____ _____

Student's Physician / Health Care Provider Date

Acknowledged and received by:

_____ _____

Student's Parent / Guardian Date

_____ _____

Student's Parent / Guardian Date

_____ _____

Student's Parent / Guardian Date

FIG. 1—*Continued*

Table 1—*Resources for teachers, child care providers, parents, and health professionals*

Helping the Student with Diabetes Succeed: A Guide for School Personnel, National Diabetes Education Program, 2003; available online at www.ndep.nih.gov.

Diabetes Care Tasks at School: What Key Personnel Need to Know, Alexandria, VA, American Diabetes Association; available online at www.diabetes.org/schooltraining.

Health in Action: Diabetes and the School Community, American School Health Association, American Diabetes Association, Aug/Sept. 2002, Vol. 1, No. 1, 330-678-1601.

Your School & Your Rights: Protecting Children with Diabetes Against Discrimination in Schools and Day Care Centers, Alexandria, VA, American Diabetes Association, 2001 (brochure); available online at http://www.diabetes.org/type1/parents_kids/away/scrights.jsp.*

Your Child Has Type 1 Diabetes: What You Should Know, Alexandria, VA, American Diabetes Association, 2001 (brochure); available online at http://www.diabetes.org/main/community/advocacy/type1.jsp.*

Treating Diabetes Emergencies: What You Need to Know, Alexandria, VA, American Diabetes Association, 1995 (video); 1-800-232-6733.

American Diabetes Association: *Complete Guide to Diabetes*, Alexandria, VA, American Diabetes Association, 2005; 1-800-232-6733.

Raising a Child with Diabetes: A Guide for Parents, Alexandria, VA, American Diabetes Association, 2000; 1-800-232-6733.

Clarke W: Advocating for the child with diabetes. *Diabetes Spectrum* 12:230–236, 1999.

Education Discrimination Resources List, Alexandria VA, American Diabetes Association, 2000.*

Wizdom: A Kit of Wit and Wisdom for Kids with Diabetes (and their parents), Alexandria, VA, American Diabetes Association, 2000. Order information and select resources available at www.diabetes.org/wizdom.

The Care of Children with Diabetes in Child Care and School Setting (video); available from, Managed Design, Inc., P.O. Box 3067, Lawrence, KS 66046, (785) 842-9088.

Fredrickson L, Griff M: *Pumper in the School, Insulin Pump Guide for School Nurses, School Personnel and Parents. MiniMed Professional Education, Your Clinical Coach. First Edition, May 2000*. MiniMed, Inc., 1-800-440-7867.

Tappon D. Parker M, Bailey W: *Easy As ABC, What You Need to Know About Children Using Insulin Pumps in School*. Disetronic Medical Systems, Inc., 1-800-280-7801.

*These documents are available in the American Diabetes Association's Education Discrimination Packet by calling 1-800-DIABETES.

tion to allow the school to have a safe and appropriate environment for the child. If appropriate, members of the health care team should provide instruction and materials to the parent/guardian to facilitate the education of school staff. Educational materials from the American Diabetes Association and other sources targeted to school personnel and/or parents are available. Table 1 includes a listing of appropriate resources.

III. Expectations of the student in diabetes care

Children and youths should be able to implement their diabetes care at school with parental consent to the extent that is appropriate for the student's development and his or her experience with diabetes. The extent of the student's ability to participate in diabetes care should be agreed upon by the school personnel, the parent/guardian, and the health care team, as necessary. The ages at which children are able to perform self-care tasks are very individual and variable, and a child's capabilities and willingness to provide self-care should be respected.

1. *Preschool and day care.* The preschool child is usually unable to perform diabetes tasks independently. By 4 years of age, children may be expected to generally cooperate in diabetes tasks.
2. *Elementary school.* The child should be expected to cooperate in all diabetes tasks at school. By age 8 years, most children are able to perform their own fingerstick blood glucose tests with supervision. By age 10, some children can administer insulin with supervision.
3. *Middle school or junior high school.* The student should be able to administer insulin with supervision and perform self-monitoring of blood glucose under usual circumstances when not experiencing a low blood glucose level.
4. *High school.* The student should be able to perform self-monitoring of blood glucose under usual circumstances when not experiencing low blood glucose levels. In high school, adolescents should be able to administer insulin without supervision.

At all ages, individuals with diabetes may require help to perform a blood glucose check when the blood glucose is low. In addition, many individuals require a reminder to eat or drink during hypoglycemia and should not be left unsupervised until such treatment has taken place and the blood glucose value has returned to the normal range.

MONITORING BLOOD GLUCOSE IN THE CLASSROOM— It is best for a student with diabetes to monitor a blood glucose level and to respond to the results as quickly and conveniently as possible. This is important to avoid medical problems being worsened by a delay in monitoring/treatment and to minimize educational problems caused by missing instruction in the classroom. Accordingly, as stated earlier, a student should be permitted to monitor his or her blood glucose level and take appropriate action to treat hypoglycemia in the classroom or anywhere the student is in conjunction with a school activity, if preferred by the student and indicated in the student's Diabetes Medical Management Plan. However, some students desire privacy for blood glucose monitoring and other diabetes care tasks and this preference should also be accommodated.

In summary, with proper planning and the education and training of school personnel, children and youth with diabetes can fully participate in the school experience. To this end, the family, the health care team, and the school should work together to ensure a safe learning environment.

APPENDIX: BACKGROUND INFORMATION ON DIABETES FOR SCHOOL PERSONNEL— Diabetes is a serious, chronic disease that impairs the body's ability to use food. Insulin, a hormone produced by the pancreas, helps the body convert food into energy. In people with diabetes, either the pancreas does not make insulin or the body cannot use insulin properly. Without insulin, the body's main energy source—glucose—cannot be used as fuel. Rather, glucose builds up in the blood. Over many years, high blood glucose levels can cause dam-

age to the eyes, kidneys, nerves, heart, and blood vessels.

The majority of school-aged youth with diabetes have type 1 diabetes. People with type 1 diabetes do not produce insulin and must receive insulin through either injections or an insulin pump. Insulin taken in this manner does not cure diabetes and may cause the student's blood glucose level to become dangerously low. Type 2 diabetes, the most common form of the disease typically afflicting obese adults, has been shown to be increasing in youth. This may be due to the increase in obesity and decrease in physical activity in young people. Students with type 2 diabetes may be able to control their disease through diet and exercise alone or may require oral medications and/or insulin injections. All people with type 1 and type 2 diabetes must carefully balance food, medications, and activity level to keep blood glucose levels as close to normal as possible.

Low blood glucose (hypoglycemia) is the most common immediate health problem for students with diabetes. It occurs when the body gets too much insulin, too little food, a delayed meal, or more than the usual amount of exercise. Symptoms of mild to moderate hypoglycemia include tremors, sweating, lightheadedness, irritability, confusion, and drowsiness. A student with this degree of hypoglycemia will need to ingest carbohydrates promptly and may require assistance. Severe hypoglycemia, which is rare, may lead to unconsciousness and convulsions and can be life-threatening if not treated promptly.

High blood glucose (hyperglycemia) occurs when the body gets too little insulin, too much food, or too little exercise; it may also be caused by stress or an illness such as a cold. The most common symptoms of hyperglycemia are thirst, frequent urination, and blurry vision. If untreated over a period of days, hyperglycemia can cause a serious condition called diabetic ketoacidosis (DKA), which is characterized by nausea, vomiting, and a high level of ketones in the blood and urine. For students using insulin infusion pumps, lack of insulin supply may lead to DKA more rapidly. DKA can be life-threatening and thus requires immediate medical attention.

References

1. *American Diabetes Association Complete Guide to Diabetes.* Alexandria, Virginia, American Diabetes Association, 2005
2. *Medical Management of Type 1 Diabetes.* Alexandria, Virginia, American Diabetes Association, 2004

2 to 20 years: Boys
Stature-for-age and Weight-for-age percentiles

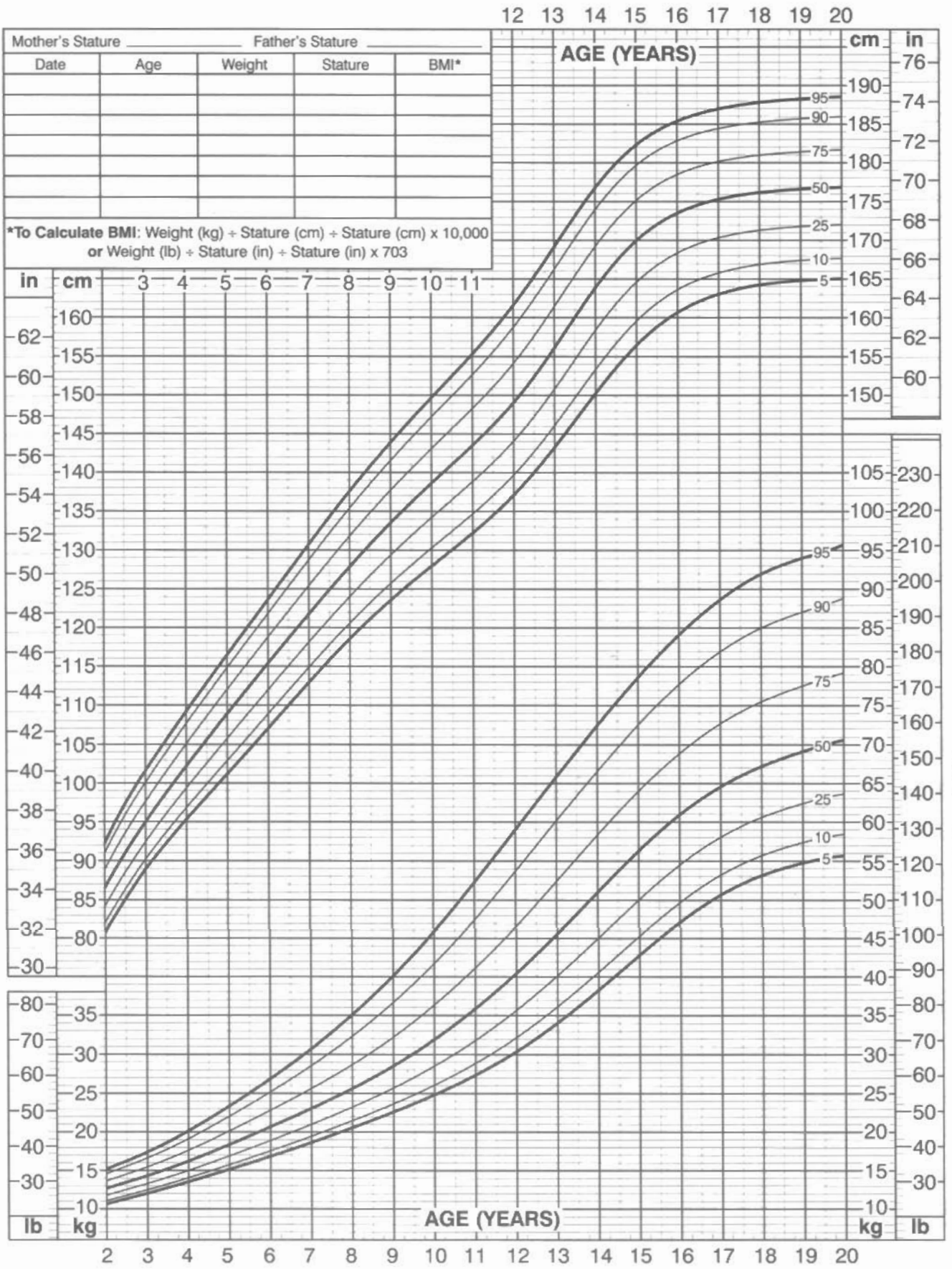
NAME _____

RECORD # _____

Mother's Stature _____ Father's Stature _____

Date	Age	Weight	Stature	BMI*

*To Calculate BMI: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Revised and corrected November 28, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the Nation Center for Chronic disease Prevention and Health Promotion (2000).

http://www.cdc.gov/growthcharts

VDH 256C

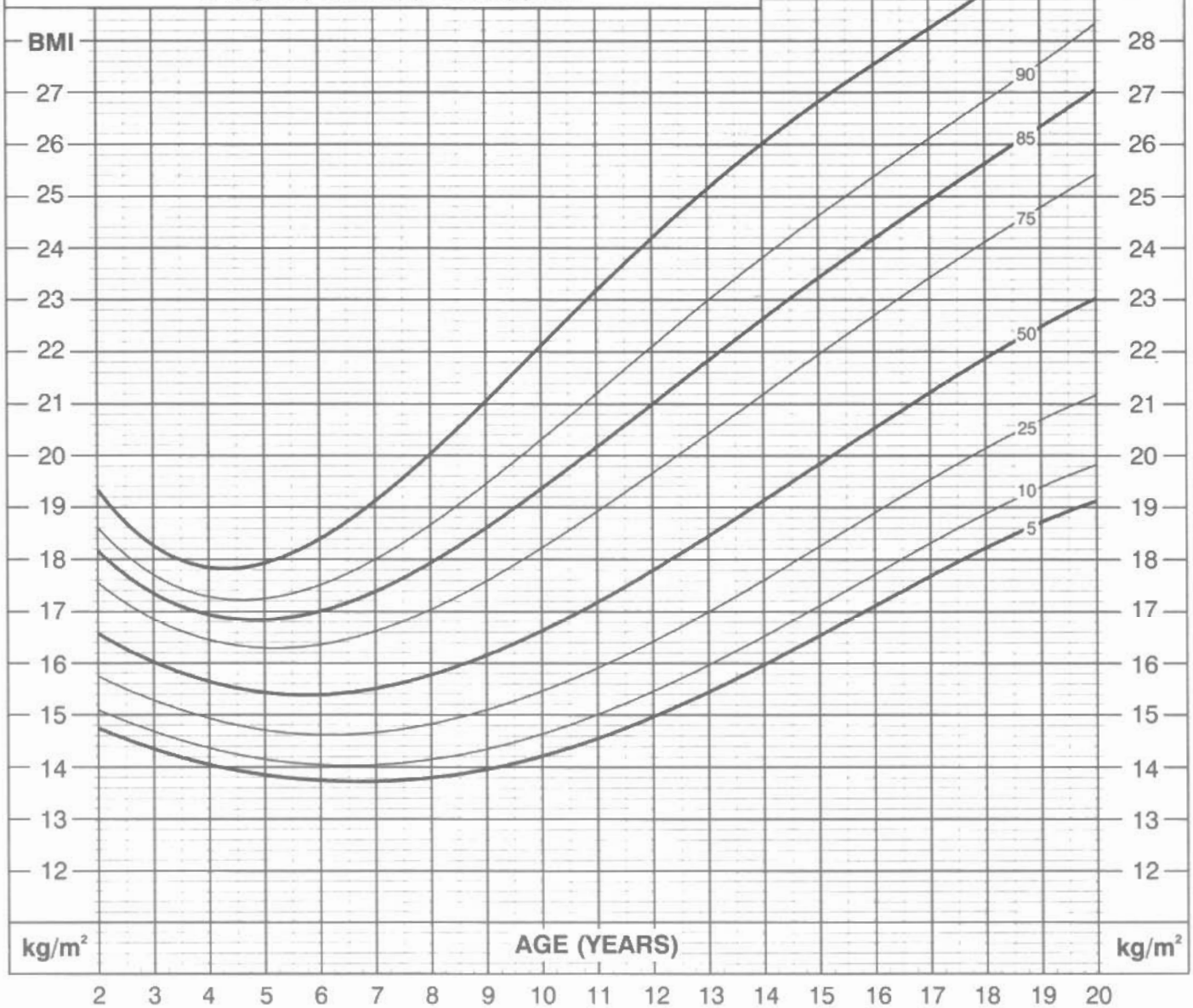
2 to 20 years: Boys
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI**: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC

2 to 20 years: Girls
Stature-for-age and Weight-for-age percentiles

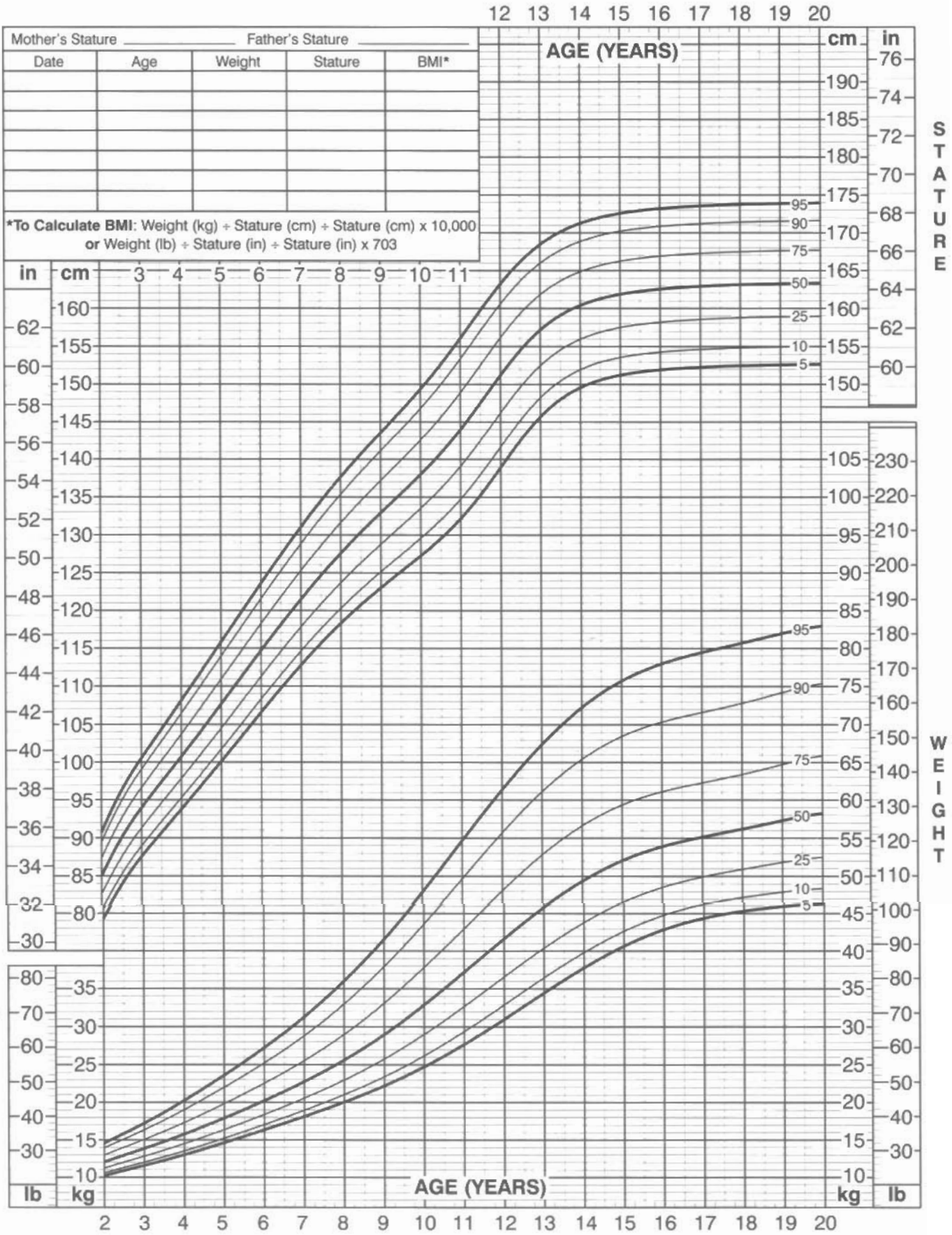
NAME _____

RECORD # _____

Mother's Stature _____ Father's Stature _____

Date	Age	Weight	Stature	BMI*

***To Calculate BMI**: Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



Revised and corrected November 28, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the Nation Center for Chronic disease Prevention and Health Promotion (2000).

http://www.cdc.gov/growthcharts

VDH 255C

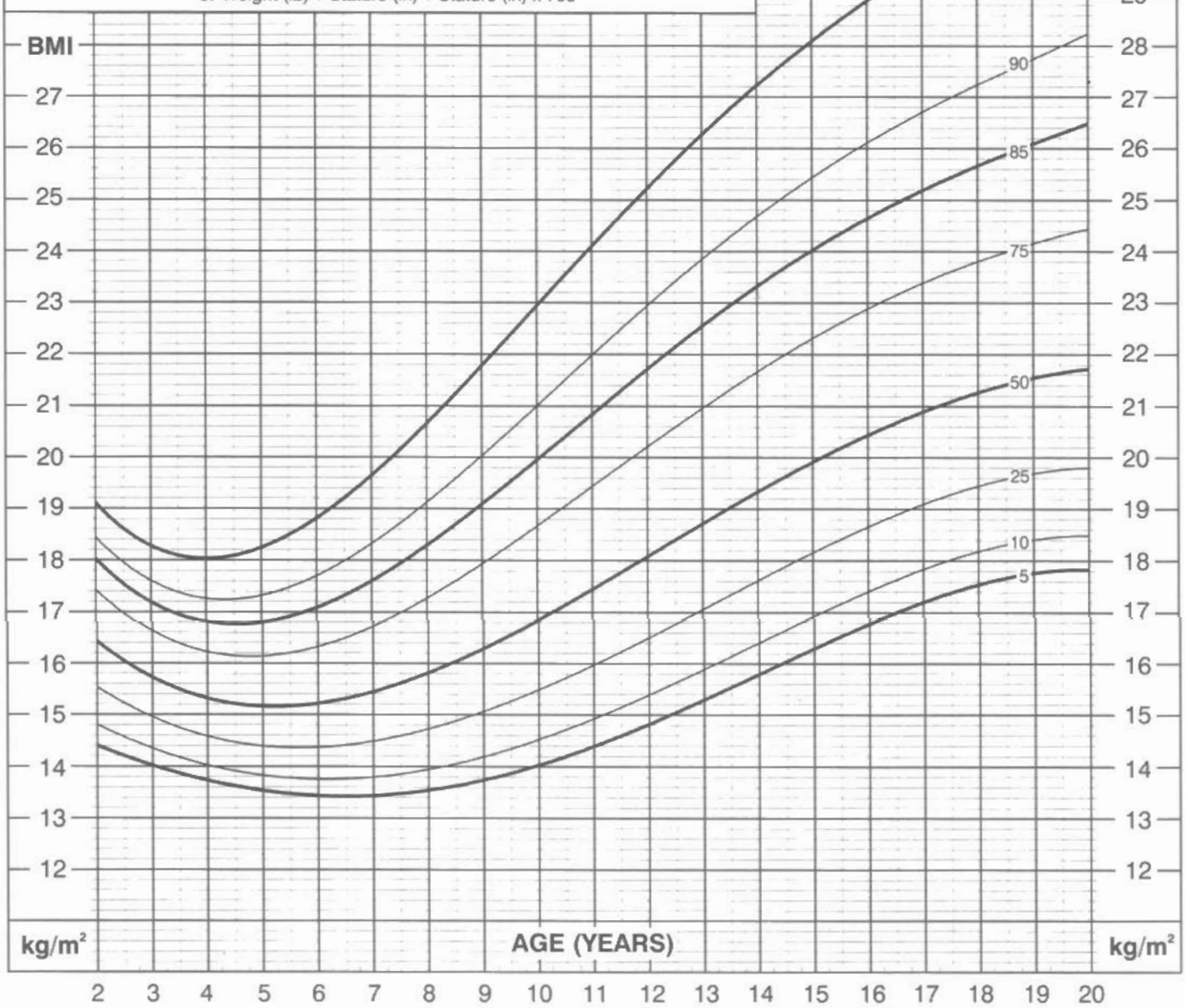
2 to 20 years: Girls
Body mass index-for-age percentiles

NAME _____

RECORD # _____

Date	Age	Weight	Stature	BMI*	Comments

***To Calculate BMI:** Weight (kg) ÷ Stature (cm) ÷ Stature (cm) x 10,000
or Weight (lb) ÷ Stature (in) ÷ Stature (in) x 703



SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

CDC